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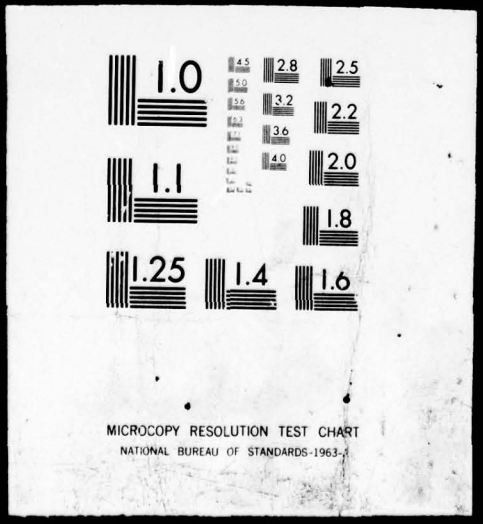

Report No. FAA-RD-78-154 II

(12) LEVEL II

NONDESTRUCTIVE EVALUATION OF AIRPORT PAVEMENTS

VOLUME II

OPERATION MANUAL FOR PAVBEN PROGRAM AT TCC

BY

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SEPTEMBER 1979

Prepared for

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
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Washington, D.C. 20590

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16. Abstract

Cost/benefit analysis of alternative pavement design is the primary goal of the PAVBEN program at the Transportation Computer Center (TCC) in Washington, D.C. The integrated system is data independent based on defined mathematical models and operation logic. The program is written in a high level language FORTRAN IV.

The job inputs consist of: 1) NDT field data; 2) types of existing pavements; 3) facility classifications; 4) demand forecast and 5) local cost values.

The default system contains all design data for: 1) 15 air transports; 2) 9 FAA regional cost values; 3) 8 types of pavement design; 4) 22 layer components; 5) 20 types of existing pavement and 6) universal mechanistic design model.

The major outputs will be: 1) NDT inventory file; 2) present functional life; 3) computed engineering data; 4) pavement thickness and cost data and 5) cost/benefit analysis for four new pavements, three overlays and three keel constructions.

The operation of PAVBEN program involves extensive use of data storage, filing technique and computed data inputs. The current operation program and this manual are prepared for the execution on computer hardware system at TCC. Modification of these documents will be required if other computer system is to be used.

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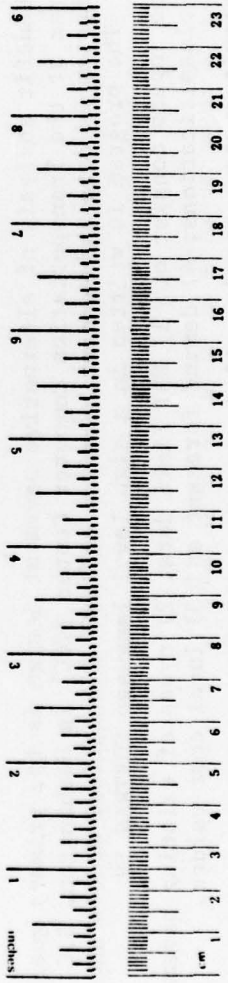
JOB

METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

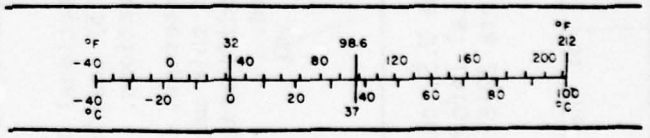
Symbol	When You Know	Multiply by	To Find	Symbol
	LENGTH			
in	inches	*2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
	AREA			
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
	MASS (weight)			
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
	VOLUME			
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3
	TEMPERATURE (exact)			
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

*1 in = 2.54 exactly. For other exact conversions and more detailed tables, see NBS Misc. Publ. 286, Units of Weights and Measures, Price $2.25, SD Catalog No. C13.10:286.



Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
	LENGTH			
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
	AREA			
cm^2	square centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares (10,000 m^2)	2.5	acres	
	MASS (weight)			
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
	VOLUME			
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m^3	cubic meters	35	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3
	TEMPERATURE (exact)			
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F



OPERATION MANUAL FOR PAVBEN PROGRAM AT TCC

CONTENTS

OPERATION LOGICS, PROGRAM LANGUAGE AND COMPUTER SYSTEM

Cost/benefit analysis of alternative pavement designs is the primary goal of the PAVBEN program operation at Transportation Computer Center (TCC) in Washington, D.C. The program in its present form is an integrated system for the nondestructive evaluation and functional design of airport pavements. The system outputs are designed to provide qualitative information for airport management and pavement engineers. The integrated programs are data independent, but are based on defined mathematical models and sound operational logic.

The model parameters, operational details and values to be processed, form a set of input data which is defined through the use of natural language heading statements and requires no programming experience on the part of the user. For the operational program at TCC, the input data is divided into job oriented and universal default inputs. The job inputs are unique for each airport. The default system contains data which generally do not change for each airport.

For actual computer operation, the key subroutine is PAVDES which is a single executable program accepting inputs in the form of cards and needs the use of temporary files on auxiliary storage. Because the present program was progressively developed from the early PAVDES in 1969, the words PAVBEN and PAVDES are interchangeable in the text. Currently, PAVDES is operational on the UNIVAC 1108 and IBM 360/65. The program is written in a high level language FORTRAN IV. However, the control cards and the storage files must be in compliance with the computer hardware system. In appendix 2, descriptions are given on the job control cards necessary for running PAVDES on the IBM 360/65 at TCC.

FORMAT OF USER'S INPUT

The program accepts input in the form of 80 character cards. The input cards are divided into two types: program control cards and cards in data groups. The control cards specify the program sections to be executed. The data groups provide the actual data values for program processing. Unless otherwise specified, each card is logically divided into eight fields of ten characters each. Each control card has a single keyword in field on which identifies itself both to the program and the user as a control card. Additional fields on a control card are used to provide related information.

Logically related input cards are placed together in data groups. The first card or cards are descriptive heading cards. The number of heading cards is fixed and the user should not add or delete any heading card. One of the heading cards is usually a field identifier card. On this card, each field has an acronym which identifies the data values on subsequent cards in that field. For more detail description, the particular field identifier can be found in the dictionary. Following the heading cards are the cards containing the actual data values corresponding to the field identifier. The order of cards in the group is important. The last card of data group is a delimitor card containing, * * in columns 1 and 2.

Values in a field have three definitions: integer, floating point or alphanumeric. They are expressed respectively by blanks and numbers, 0 to 9; blanks, the minus or plus sign, decimal point and the numbers 0 to 9; and all characters. Certain fields have only specific values allowable. Unless otherwise specified all values should be left justified in a field. This is especially important for alphanumeric fields. Blanks in floating point fields are interpreted as zeros. If a decimal point is omitted in a floating point field, the decimal is assumed to be after the rightmost column in that field. Certain field has subfields. The subfields are separated by slashes, /. The slash must appear in the exact column, as specified. To ensure proper recognization of the control cards and the data groups, the spelling and the spacing of the control keywords and heading descriptions must be correct.

PROGRAM CONTROL CARDS

The user controls the data processing by means of card inputs. All PAVBEN control cards have two portions (1) control keyword field in columns 1 to 10 and (2) specification field or fields in columns 11 to 80 containing values or additional keywords required by the particular control card being used.

There are 7 control keywords:

1. USER — Starting from column 11 is a 12-character user name.
2. JOBCODE — Starting from column 11 are 7 characters to be printed in block letters on title page. Usually 3-letter airport code, dash, and 3-letter FAA regional code.
3. JOB — Starting from column 11 is a 70-character space for job name. Usually airport, dash, FAA region.
4. RUN — Field 2 identifies the program to be executed. There are 5 allowable keywords: NDT1, NDT2, NDT3, PFL, and PAVDES. There is an additional field associated with NDT1. Field 3 may contain blanks or PLOT. If PLOT is specified, the printer will plot NDT machine data.
5. PRINT — There are 2 allowable keywords in field 2: DICTIONARY - prints all dictionary items in sorted groups. INPUT - prints control cards and job inputs.
6. SITE — Starting from column 11 is 4-character site code. For TCC operation, this card is in the default system of inputs and is in the form of SITE ------ TCC.
7. LINE — In column 11 is a single digit number indicates the lines skipped by the operating system on a printed page. For TCC operation, this card is in the default system of inputs and is LINE ------ 1.

```
USER        D. YANG
JØBCØDE     BTV-ANE
JØB         BURLINGTØN INTERNATIØNAL AIRPØRT - FAA NEW ENGLAND REGIØN
RUN         NDT1                PLØT
RUN         NDT2
RUN         NDT3
RUN         PFL
RUN         PAVDES
PRINT       DICTIØNARY
PRINT       INPUT
```

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JOB INPUTS - NDT DATA PROCESSING

NDT GRID IDENTIFICATIONS

FIELD	IDENTIFIER	DESCRIPTIONS
1	GRID	defines 1 char. GRID identifier, A to Z
2	CODE	defines 9 char. GRID code

NDT CALIBRATIONS

FIELD	IDENTIFIER	DESCRIPTIONS
1	DATE	has 3 subfields, month, day and year
2	TIME/CAL.	has 3 subfields, day, time, and calibration index
3	RESPONSE	response calibration, if blank, computes from RES@ZERO and RES@CALIB
4	AMPLITUDE	amplitude calibration, if blank, computes from AMP@ZERO and AMP@CALIB
5	RES@ZERO	machine test data
6	AMP@ZERO	machine test data
7	RES@CALIB	machine test data
8	AMP@CALIB	machine test data

NDT TEST IDENTIFICATIONS

FIELD	INDENTIFIER	DESCRIPTIONS
1	TEST	defines test number, such as 8. Any repeated tests must have unique number, but can be identified by a sequence number. 8-1 for example. Test number can range from 1 to 999 with each number having a sequence number from 0 to 9. If test does not have sequence number then it is interpreted as 0. Sequence number, if any, must appear in Column 5. The test number must appear in the first three columns.
2	LOCATION	9 char. location code having 5 subfields; 1st char. grid identifier 5 char. station code 1 char. offset identifier 2 char. offset code
3	TIME/CAL.	3 subfields, day, time, calibration index
4	TEMP.	temperature readings
5	DSM(W)	DSM test data, kips per inch
6	LOAD/RAD.	2 subfields, peak to peak forcing function, lbs. radius of load plate, inches
7	PFLPAV	2 subfields, PFLPAV index PFLPAV Code
8	DRAINAGE	drainage code, NORM or WET

NDT MACHINE DATA

FIELD	IDENTIFIER	COLUMNS	DESCRIPTION
1	NO	1-5	test number
2	RESPNS	7-12	response at test frequency
3	AMPL	14-19	amplitude at test frequency
4	FREQ	21-26	test frequency
5	RESPNS	28-33	
6	AMPL	35-40	
7	FREQ	42-47	
8	RESPNS	49-54	
9	AMPL	56-61	
10	FREQ	63-68	

FREQ should not be repeated. Freq. in decreasing order. Do not leave any fields blank between frequency.

NDT2 STATISTICAL PROCESS OF NDT DATA

FIELD	IDENTIFIER	COLUMNS	DESCRIPTION
1	PLOT	1-10	defines NDT2 plot
2		11-70	defines title of plot
1		1-5	GRID
2		6-12	AVERAGE defines the statistical processing of group NDT data and NDT2 plotting. Blank defines just NDT2 plotting.
1		1-3	GRID identifier
2		5	Number of 5 char. station code
3		7	Number of 2 char. offset code
4		11-20	5 char. station code, starting from low station.
5		21-30	
6		31-40	
7		41-50	
8		51-60	10 column field. Continuation cards if necessary.
9		61-70	

CONTINUATION CARD
Continue 5 char. station code in 10 column field.
Following last station code, defines 2 char. offset code at low starting number, then, the last offset code in the next 10-column field.

```
NDT       GRID IDENTIFICATIØNS
GRID      CØDE
A         RW 15-33
B         RW 1-19
C         TW A
D         GATE/APRN
E         XTWS TØ A
F         TW B
G         TW C
H         APRØN GA
I         TW D
J         TW E
K         TW F
L         APRN VANG
M         RW1-19EXT
N         TW NEW
P         XTW-GA NU
R         TW - RW19
**
```

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NDT CALIBRATIONS

DATE	TIME/CAL.	RESPONSE AMPLITUDE	RES@ZERO	AMP@ZERO	RES@CALIB	AMP@CALIB
9/12/77	12/0930/1		000010	000423	010012	109899
9/12/77	12/1330/2		000004	000331	010011	109999
9/12/77	12/1825/3		000019	000173	009976	110015
9/13/77	13/0900/1		000019	000550	009999	110060
9/13/77	13/1435/2		000005	000236	010040	109896
9/13/77	13/1855/3		000005	000158	010070	110016
9/14/77	14/0904/1		000004	000345	010025	109916
9/14/77	14/1130/2		000020	000449	009957	110120
9/14/77	14/2238/3		000008	000299	010017	109788
9/14/77	15/2238/1		000008	000299	010017	109788
9/15/77	15/0325/2		000032	000247	009950	109940
9/15/77	15/0657/3		000001	000344	010000	109990
9/15/77	15/2239/4		000000	000220	010099	109787
9/15/77	16/2239/1		000000	000220	010099	109787
9/16/77	16/0300/2		000004	000339	010030	110160
9/16/77	16/1410/3		000010	000483	010029	109799
9/16/77	16/1734/4		000005	000250	010020	109819

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NDT TEST	TEST IDENTIFICATIONS LØCATIØN	TIME/CAL.	TEMP.	DSM(W)	LØAD/RAD.	PFLPAV	DRAINAGE
1	A000.5R12	15/0057/1	50.7	6080.	3.0/9.	13/CC7	NØRM
2	A002.5L12	15/0129/1		6080.	3.0/9.	13/CC7	NØRM
3	A004.5R12	15/0142/1		11600.	3.0/9.	2/AC2	NØRM
4	A006.5L12	15/0154/1		11760.	3.0/9.	2/AC2	NØRM
5	A008.5R12	15/0212/1		11360.	3.0/9.	2/AC2	NØRM
6	A010.5L12	15/0233/1		12280.	3.0/9.	2/AC2	NØRM
7	A012.5R12	15/0245/1		11280.	3.0/9.	2/AC2	NØRM
8	A015.0L12	15/0350/2		13320.	3.0/9.	2/AC2	NØRM
8-1	A015.0L06	15/0400/2		12240.	3.0/9.	2/AC2	NØRM
8-2	A015.0L18	15/0340/2		12280.	3.0/9.	2/AC2	NØRM
8-3	A015.0L30	15/0317/1		12200.	3.0/9.	2/AC2	NØRM
8-4	A015.0L50	15/0306/1		13320.	3.0/9.	2/AC2	NØRM
8-5	A015.0L70	15/0257/1	47.8	10440.	3.0/9.	2/AC2	NØRM
8-6	A015.0L80	15/0019/1		5280.	1.5/15.	0/SUB	NØRM
9	A017.5R12	15/0434/2		12200.	3.0/9.	2/AC2	NØRM
10	A020.0L12	15/0444/2		14440.	3.0/9.	2/AC2	NØRM
11	A023.0R12	15/0422/2	44.4	16000.	3.0/9.	2/AC2	NØRM
12	A026.0L12	15/0507/2		14400.	3.0/9.	2/AC2	NØRM
13	A029.0R12	15/0520/2		15200.	3.0/9.	2/AC2	NØRM
14	A032.0L12	15/0535/2		17760.	3.0/9.	2/AC2	NØRM
15	A035.0R12	15/0606/2		12200.	3.0/9.	2/AC2	NØRM
16	A037.5L12	15/0620/2		12200.	3.0/9.	2/AC2	NØRM
17	A040.0R12	15/0634/2		15560.	3.0/9.	2/AC2	NØRM
**							

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NDT MACHINE DATA

NØ.	RESPNS	AMPL	FREQ	RESPNS	AMPL	FREQ	RESPNS	AMPL	FREQ
1	000178	030890	060053	000234	030530	055033	000279	031219	050020
1	000310	030073	045019	000354	030269	040012	000339	030324	035020
1	000299	029520	030028	000332	029954	028009	000378	035154	026000
1	000353	030076	024026	000380	029989	021999	000374	030139	020000
1	000393	030959	017997	000417	030563	016006	000482	030369	015000
1	000484	029939	014013	000510	029460	013009	000526	030359	011993
1	000683	030003	011000	001070	030199	010012	000884	029390	009009
1	000800	029709	007979	000815	032359	006986	000810	031666	005875
1	000859	030850	005010						
2	000139	030024	060059	000206	029885	055040	000265	030377	050060
2	000317	030269	045032	000319	030244	040040	000389	030199	035024
2	000353	029943	030010	000311	029860	028034	000349	029797	026004
2	000360	029677	023999	000399	030474	022004	000380	030136	019999
2	000382	029917	018019	000415	030404	016000	000460	029994	015022
2	000480	029614	014016	000512	029845	012997	000509	029919	012000
2	000750	031430	011014	001109	031180	010004	000757	030024	009009
2	000714	030895	007993	000724	029910	007004	000829	030280	006000
2	000832	029339	004985						

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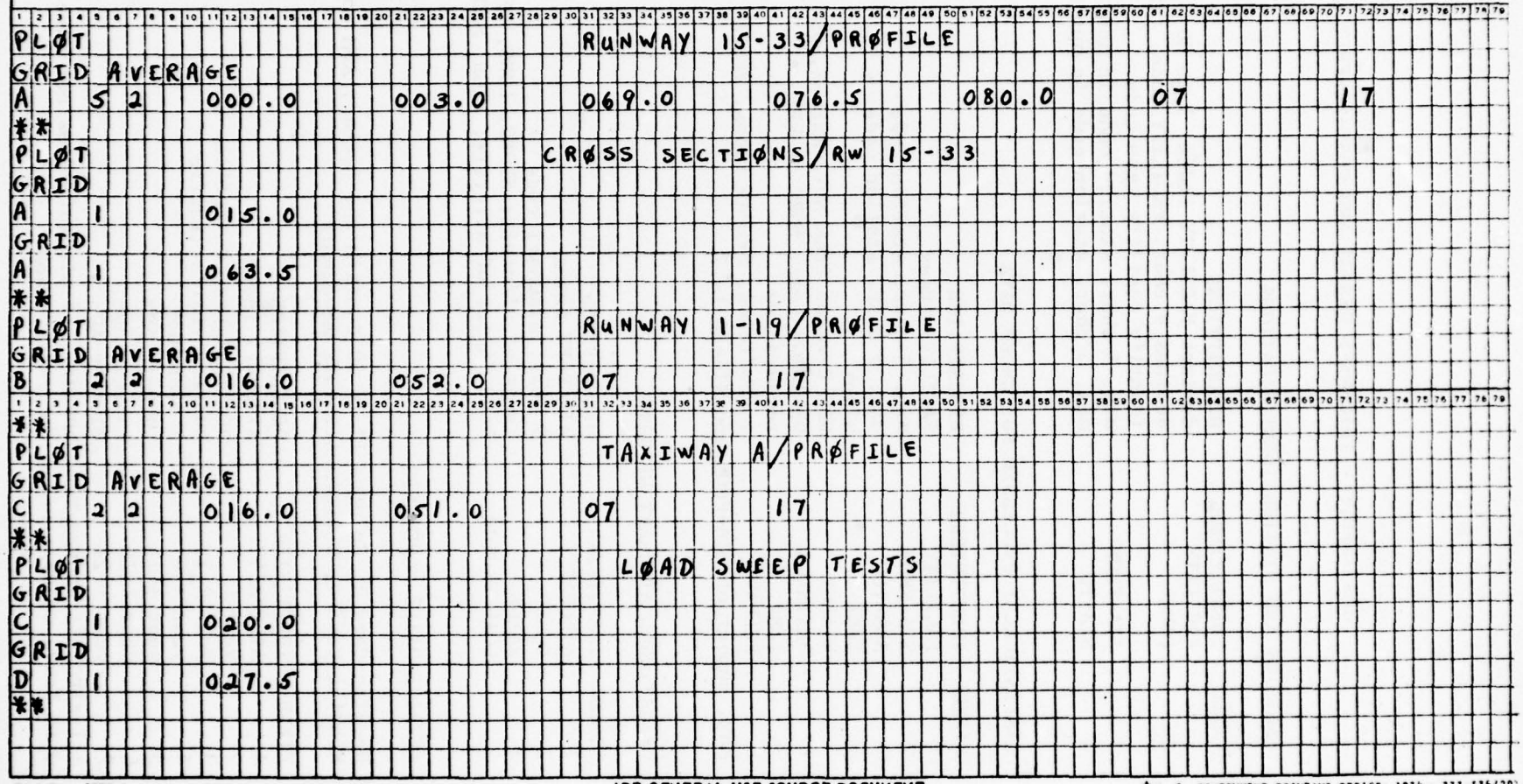

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JOB INPUTS - THICKNESS DESIGN AND COST-BENEFIT ANALYSIS

FACILITY AND STATION IDENTIFICATIONS

FIELD	IDENTIFIERS	DESCRIPTIONS
1	FACILITY	defines FACILITY index, 1 to 50
2	CODE	defines 9 char. FACILITY code, first 2 char. identify facility type code
3	STA-FROM	min. 5 char. station code in hundreds of feet
4	STA-TO	max. 5 char. station code in hundreds of feet

STATISTICALLY PROCESSED NDT GROUP DATA

FIELD	IDENTIFIERS	DESCRIPTION
1	FACILITY	FACILITY index
2	STA-FROM	min. 5 char. station code
3	STA-TO	max. 5 char. station code
4	SUMZ	blank
5	EVALUE	NDT E-value from NDT2 AREA-E, psi
6	DRAINAGE	DRAINAGE code, NORM or WET
7	TEMP.	temperature
8	PFLPAV	2 subfields, PFLPAV index, PFLPAV code

Max. number of *STA-FROM* and *STA-TO* is 7.

OPERATIONAL AIRCRAFT WEIGHTS

FIELD	IDENTIFIER	DESCRIPTION
1	AIRCRAFT	AIRCRAFT index
2	CODE	9 char. AIRCRAFT code
3	RANGE	range of aircraft; XLONG, LONG, MEDIUM, SHORT
4	LOAD FACTOR	load factor of aircraft; HIGH, MEDIUM

AVERAGE DAILY MOVEMENTS

Heading Card 1, Columns 11 to 20 contain the 6 char. ADM code.
Heading Card 2, Defines aircraft movements

FIELD	IDENTIFIER	DESCRIPTION
1	AIRCRAFT	AIRCRAFT index
2	year	previous year's traffic
3	year + 1	current year's traffic
4	year + 6	5 year ADM
5	year + 11	10 year ADM
6	year + 16	15 year ADM
7	year + 21	20 year ADM

All aircraft indexs must appear. If aircraft does not have any traffic than leave columns under the years blank.

AIRPORT TRAFFIC DISTRIBUTION

Heading card 1, columns 11 to 20 contain the 6 char. ATD code

FIELD	IDENTIFIER	DESCRIPTION
1	FACILITY	FACILITY index
2	STA-FROM	min. 5 char. station code
3	STA-TO	max. 5 char. station code
4	YEAR	year + 1 as defined in ADM
5	TOW%	percentage of take-off
6	LRW%	percentage of landing roll
7	TDW%	percentage of touchdown

YEAR should match the one defined in ADM. A given traffic distribution may change from year to year. Each sta-from and sta-to for a facility must have the same number of years. For example, FACILITY 1 defines a changed traffic distribution from 1978 to 1983 to 1998, and FACILITY 13 defines a new facility with no traffic from 1978 to 1983 but with traffic from 1983 to 1998.

REGIONAL COST VALUES

FIELD	IDENTIFIER	DESCRIPTION
1	COST	defines COST index 1 to 25
2	CODE	defines 6 char. cost code
3	DATE	*date of cost values, month/date/year*
4	3 char. airport code and then cost value for each index.	

If regional default cost values are used, defines 3 char. FAA regional code in field 4.

PFL PRESENT FUNCTIONAL LIFE

FIELD	IDENTIFIER	DESCRIPTION
1	FACILITY	FACILITY index
2	SERVYR	service year must be greater than 1 year
3	BANDWIDTH	BANDWIDTH index
4	FORECAST	FORECAST code

Controls the number of facilities that will be printed when the PFL program is run.

PAVDES PAVEMENT DESIGN

FIELD	IDENTIFIER	DESCRIPTION
1	FACILITY	FACILITY index
2	SERVYR	service year in 5, 10, 15 or 20 years
3	BANDWIDTH	BANDWIDTH index
4	FORECAST	FORECAST code

Controls the number of facilities which will be printed when the PAVDES program is run. Facility number may be repeated to get several different designs for the same facility.

FACILITY AND STATION IDENTIFICATIONS

	FACILITY	CODE	STA-FROM	STA-TO
1		RW 15-33	000.0	080.0
2		RW 1-19	016.0	052.0
3		TW A	016.0	051.0
4		GATE/APRN	026.0	035.0
5		XTWS TO A	000.0	000.0
6		TW B	000.0	009.0
7		TW C	000.0	022.0
8		APRON GA	006.0	015.0
9		TW D	000.0	025.0
10		TW E	001.0	006.0
11		TW F	001.0	049.0
12		APRN VANG	048.0	063.0
13		RW1-19EXT	000.0	016.0
14		TW NEW	000.0	037.0
15		XTW-GA NU	000.0	010.0
16		TW - RW19	000.0	018.0
**				

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STATISTICALLY PROCESSED NDT GROUP DATA

FACILITY	STA-FROM	STA-TO	SUMZ	EVALUE	DRAINAGE	TEMP.	PFLPAV
1	000.0	003.0		179545.	NORM		13/CC7
	003.0	069.0		34885.	NORM		2/AC2
	069.0	076.5		27745.	NORM		1/AC1
	076.5	080.0		165589.	NORM		13/CC7
2	016.0	052.0		32267.	NORM		1/AC1
3	016.0	051.0		29191.	NORM		14/BC1
4	026.0	035.0		21726.	NORM		1/AC1
5	000.0	000.0		23200.	NORM		1/AC1
6	000.0	009.0		32320.	NORM		1/AC1
7	000.0	022.0		34350.	NORM		1/AC1
8	006.0	015.0		52994.	NORM		1/AC1
9	000.0	025.0		36791.	NORM		1/AC1
10	001.0	006.0		26376.	NORM		1/AC1
11	001.0	049.0		36471.	NORM		1/AC1
12	048.0	063.0		24670.	NORM		1/AC1
13	000.0	016.0		10667.	NORM		0/SUB
14	000.0	037.0		10577.	NORM		0/SUB
15	000.0	010.0		10381.	NORM		0/SUB
16	000.0	018.0		10327.	NORM		0/SUB
**							

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ØPERATIØNAL AIRCRAFT WEIGHTS

AIRCRAFT	CØDE	RANGE	LØAD FACTØR
1	B747		
2	DC10/30		
3	DC10/10		
4	L1011		
5	DC8(B707)	LØNG	MEDIUM
6	B720		
7	B727-200	MEDIUM	MEDIUM
8	B727-100	MEDIUM	MEDIUM
9	DC9(B737)	SHØRT	MEDIUM
10	F27	SHØRT	MEDIUM
11	DCX-200		
12	B757		
13	B767-200		
14	A300B4		
15	CØNCØRDE		
**			

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ADM ADMSUG AVERAGE DAILY MØVEMENTS, SUGGESTED

NUMBER ØF AIRCRAFT MØVEMENTS - PEAK MØNTH

AIRCRAFT	1977	1978	1983	1988	1993	1998
1						
2						
3						
4						
5	.1	.1	.2	.3	.4	.5
6						
7	0.	0.	6.	7.	9.	12.
8	0.	0.	0.	14.	16.	17.
9	18.	19.	20.	10.	6.	4.
10	11.	10.	9.	11.	20.	22.
11						
12						
13						
14						
15						
**						

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NOTE: FACILITY 1 IN 1978 HAS TRAFFIC TURNING AROUND

ATD FACILITY	ATDSUG STA-FROM	AIRPORT TRAFFIC STA-TO	YEAR	DISTRIBUTION, TOW %	SUGGESTED LRW %	TDW %
1	000.0	030.0	1978	120.	100.	70.
			1983	80.	100.	80.
	030.0	053.0	1978	140.	100.	0.
			1983	100.	100.	0.
	053.0	078.0	1978	40.	100.	30.
			1983	20.	100.	20.
2	016.0	052.0	1978	20.	20.	0.
3	016.0	051.0	1978	80.	80.	0.
4	026.0	035.0	1978	60.	60.	0.
5	000.0	000.0	1978	20.	20.	0.
6	000.0	009.0	1978	20.	20.	0.
7	000.0	022.0	1978	30.	30.	0.
8	006.0	015.0	1978	10.	10.	0.
9	000.0	025.0	1978	20.	20.	0.
10	001.0	006.0	1978	10.	10.	0.
11	001.0	049.0	1978	40.	40.	0.
12	048.0	063.0	1978	20.	20.	0.
13	000.0	016.0	1978	0.	0.	0.
			1983	20.	20.	10.
14	000.0	037.0	1978	0.	0.	0.
			1983	80.	80.	0.
15	000.0	010.0	1978	0.	0.	0.
			1983	20.	20.	0.
**						

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REGIØNAL CØST VALUES

CØST	CØDE	DATE	BTV
1	PCBT	10/01/77	46.00
2	FIAGT	10/01/77	5.50
3	CØAGT	10/01/77	5.75
4	ASCLT	10/01/77	78.00
5	HLBT	10/01/77	70.00
6	PØZBT	10/01/77	4.00
7	SFST	10/01/77	2.85
8	IWFAT	10/01/77	1.20
9	RSWLB	10/01/77	.36
10	LBBM	10/01/77	.31
11	CLHR	10/01/77	10.95
12	SLEHR	10/01/77	13.91
**			

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```
PFL       PRESENT FUNCTIØNAL LIFE
FACILITY  SERVYR    BANDWIDTH FØRECAST
1         1         2         FAMSUG
2         1         2         FAMSUG
3         1         1         FAMSUG
4         1         1         FAMSUG
5         1         1         FAMSUG
6         1         1         FAMSUG
7         1         1         FAMSUG
8         1         1         FAMSUG
9         1         1         FAMSUG
10.       1         1         FAMSUG
11        1         1         FAMSUG
12        1         1         FAMSUG
**
```

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ADP GENERAL USE SOURCE DOCUMENT

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PAVDES	PAVEMENT DESIGN		
FACILITY	SERVYR	BANDWIDTH	FØRECAST
1	5	2	FAMSUG
1	20	2	FAMSUG
2	5	2	FAMSUG
2	20	2	FAMSUG
3	20	1	FAMSUG
4	20	1	FAMSUG
5	20	1	FAMSUG
6	20	1	FAMSUG
7	20	1	FAMSUG
8	20	1	FAMSUG
9	20	1	FAMSUG
10	20	1	FAMSUG
11	20	1	FAMSUG
12	20	1	FAMSUG
13	20	2	FAMSUG
14	20	1	FAMSUG
15	20	1	FAMSUG
16	20	1	FAMSUG
**			

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ADP GENERAL USE SOURCE DOCUMENT

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LISTING OF DEFAULT INPUTS

DICTIONARY OF COMPUTER PROGRAM CODES

FIELD	COLUMNS	DESCRIPTION
1	1-6	defines 6 character identifier
2	7-78	defines 72 character identifier description

Dictionary has several subgroups. The first card of subgroup has a blank identifier with the subgroup heading in field two. The last card of a subgroup is a blank card.

REGIONAL COST VALUES

FIELD	IDENTIFIER	DESCRIPTION
1	COST	defines cost index 1 to 25
2	CODE	defines 6 character cost code
3	DATE	date of cost values, month/date/year
4	REGION CODE	cost value for the region coded
5	REGION CODE	
6	REGION CODE	
7	REGION CODE	
8	REGION CODE	

There may be more than one data group. Each data group may have one or more regions. The region code is 4 characters long. The cost values of the last region on the last data group will be used in the computations. To use earlier defined regional cost values, the region to be the last region must be defined. See input for example, that the region ANE is defined to be the last region.

FACILITY TYPES

FIELD	IDENTIFIER	DESCRIPTION
1	TYPE	defines index 1 to 5
2	FACILITY	defines 2 character code
3	FACILITY	defines additional 2 character code
4	FACILITY	for example, the first two characters
5	FACILITY	of RUNWAY is the facility type code.
6	FACILITY	

BANDWIDTH FOR TRAFFIC DISTRIBUTION

FIELD	IDENTIFIER	DESCRIPTION
1	BANDWIDTH	defines bandwidth index 1 to 5
2+3	CODE	defines 12 character BANDWIDTH code
4	RW	bandwidth in feet
5	TW	bandwidth in feet
6	HP	bandwidth in feet

DYNAMIC INCREMENT OF AIRCRAFT VIBRATION

FIELD	IDENTIFIER	DESCRIPTION
1	DI	facility type location, keel or side
2	RW	dynamic increment, in g
3	TW	dynamic increment, in g
4	HP	dynamic increment, in g

VELOCITY OF AIRCRAFT

FIELD	IDENTIFIER	DESCRIPTION
1	VEL	facility type location, keel or side
2	RW	aircraft velocity in knots
3	TW	aircraft velocity in knots
4	HP	aircraft velocity in knots

AIRCRAFT DATA GROUP

FIELD	IDENTIFIER	DESCRIPTION
1	AIRCRAFT	defines index, 1 to 20
2	CODE	defines 9 char. AIRCRAFT code
3	MTOW	max. take-off weight, lbs.
4	MLRW	max. landing roll weight, lbs.
5	OEW	operational empty weight, lbs.
6	RANGE	range of aircraft, XLONG, LONG, MEDIUM, or SHORT
1	BLANK	
2	BLANK	
3	MLG	main landing gear weight as fraction of MTOW
4	WGT	single wheel weight as fraction of MTOW
5	PSI	tire pressure, psi
6	FREQ	natural frequency of rubber tire, Hz
7	NWHEEL	number of wheels of MLGS
8	XMAX	distance between outer wheels, inches.
1	BLANK	
2	BLANK	
3	WHEEL	NWHEEL transverse coordinates
4	X-COORD	number of cards is the integer of (NWHEEL-1)/6 plus 1.
5		
6		
7		
8		
1	BLANK	
2	BLANK	
3	WHEEL	NWHEEL longitudinal coordinates
4	Y-COORD	number of cards is the integer of (NWHEEL-1)/6 plus 1.
5		
6		
7		
8		

TOW AIRCRAFT TAKE-OFF WEIGHT

Columns 1-10 of 2nd heading card identifies the aircraft load factor; Third heading card shows title of input listing RANGE OF AIRCRAFT.

FIELD	IDENTIFIER	DESCRIPTION
1	AIRCRAFT	define AIRCRAFT index
2	XLONG	aircraft weight in lbs. for load factor and range
3	LONG	aircraft weight in lbs. for load factor and range
4	MEDIUM	aircraft weight in lbs. for load factor and range
5	SHORT	aircraft weight in lbs. for load factor and range

FINANCIAL COST DATA

FIELD	IDENTIFIER	DESCRIPTION
1	FINANCE	blank
2	AIRB	annual interest rate of bond
3	ARCD	annual rate of cash discount
4	ASCCC	annual escalation rate of construction cost
5	ASCMC	annual escalation rate of maintenance need
6	NBL	maturity of revenue band in years
7	NSLP	mortgage payments of bond, in years

DEMAND FORECAST

FIELD	IDENTIFIER	DESCRIPTION
1	FORECAST	defines 6 char. FORECAST code
2	ADM	defines 6 char. ADM code
3	ATD	defines 6 char. ATD code

PFLDI, smoothness of pavement surface

FIELD	IDENTIFIER	DESCRIPTION
1	Col. 1-10	defines DI for deflection analysis
2	Col. 11-50	defines 40 char. smoothness description

DESIGN AIRCRAFT

FIELD	IDENTIFIER	DESCRIPTION
1	DESIGN	blank
2	AIRCRAFT	aircraft index to be used as design standard
3	WEIGHT	aircraft weight in lbs. to be used

CLASS, identification for design coefficients

FIELD	IDENTIFIER	DESCRIPTION
1	CLASS	defines CLASS index 1 to 20
2	CODE	defines 6 char. CLASS code
3	OVSFKL	overstress factor for keel
4	OVSFSD	overstress factor for side
5	STRESS	conversion factor from E-value to tensile stress
6	FATIST	coef. of fatigue stress
7	COVAR	coef. of variance
8	A1	coef. of transfer function (trans. to long def.)
1	BLANK	
2	BLANK	
3	A2	coef. of transfer function (trans. to long def.)
4	D1	coef. of transfer function (elastic to cumulative)
5	D2	coef. of transfer function (elastic to cumulative)
6	DC	coef. of contact rigidity

LAYER, identification for default E-value and Poisson's ratio

FIELD	IDENTIFIER	DESCRIPTION
1	LAYER	defines LAYER index 1 to 25
2	CODE	defines 6 char. LAYER code
3	EVALUE	default E-value of layer
4	POISSON	default Poisson ratio of layer; if blank default Poisson ratio will be computed from E-value
5	MOD(S)	mobilization and demobilization cost for small job
6	MOD(N)	mobilization and demobilization cost for normal size of work.

LAYER COST DATA GROUP

FIELD	IDENTIFIER	DESCRIPTION
1	LAYER	defines LAYER index
2	PCBT	coef. for computing unit price of the layer
3	FIAGT	
4	COAGT	
5	ASCLT	
6	HLBT	
7	POZBT	
8	SFST	

Continuation Card

1	BLANK	
2	IWFAT	coef. for computing unit price of the layer
3	RSWLB	
4	LBBR	
5	CLHR	
6	SLEHR	

PAVEMENT DATE GROUP

FIELD	IDENTIFIER	DESCRIPTION
1	PAVEMENT	defines PAVEMENT index 1 to 20
2	CODE	defines 6 char. PAVEMENT code
3	LAYER	defines code of layer composition
4	THICKNESS	default thickness of layer, inches
5	EVALUE	if blank, use default E-value
6	POISSON	if blank, use default poisson

Last card in each defined pavement must have a layer code of SUB, PAV or PFLPAV. SUB defines new pavement on subgrade; PAV defines overlay pavement on existing pavement which is treated as one layer; PFLPAV defines overlay pavement on actual existing pavement.

DESIGN CHARTS - LAYER THICKNESSES

FIELD	IDENTIFIER	DESCRIPTION
1	ITERATE	blank
2	PAVEMENT	PAVEMENT index
3	LAYER	LAYER code
4	HMIN	min. thickness of design chart, inches
5	HMAX	max. thickness of design chart, inches
6	HSTEP	thickness increment of design chart, inches

NEW PAVEMENT ESUB GRID VALUES

FIELD	DESCRIPTION
1 to 8	subgrade E-values of design charts for new pavement and overlay pavements on actual existing pavement.

Continuation card also has same format.
number of cards = the integer of (number of E-values -1)/8 plus 1.
max. number of E-values = 20.

OVERLAY PAVEMENT EPAV GRID VALUES

FIELD	DESCRIPTION
1 to 8	E-values for overlay pavements on existing pavement which is treated as a single layer support.

Continuation card also has same format.
number of cards = the integer of (number of E-values -1)/8 plus 1.
max. number of E-values = 20.
Care should be taken in having E-values different from that of bottom layer of new pavements, i.e., the E-value of bottom layer of new pavement to be designed shall be different from the E-value of existing pavement.

CODES OF KEEL AND SIDE

FIELD	IDENTIFIER	DESCRIPTION
1	PAVEMENT	blank
2	NUMBER	blank
3	KEEL	defines pavement index for keel
4	SIDE	defines pavement index for side

EXISTING PAVEMENT DATA GROUP

FIELD	IDENTIFIER	DESCRIPTION
1	PFLPAV	defines PFLPAV index, 1 to 20
2	CODE	defines 6 char. PFLPAV code
3	LAYER	LAYER code
4	THICKNESS	thickness of layer, inches
5	EVALUE	if blank, default value is used
6	POISSON	if blank, default value is used

Each PFLPAV must end with a LAYER code SUB.

PFLPAV ESUB GRID VALUES

FIELD	DESCRIPTION
1 to 8	subgrade E-value for PFLPAV deflection and stress chart

Continuation card also has same format.
number of cards = the integer of (number of E-values -1)/8 plus 1.
max. number of E-values = 20.

PFLPAV DESIGN CHARTS CONTROL GROUP DATA

FIELD	IDENTIFIER	DESCRIPTION
1	PFLPAV	PFLPAV index
2	CLASS	CLASS code for design coefficients
3	LAYER FOR STR/MT	LAYER code for governing stress condition

PFLPAV IN AIRCRAFT EQUIVALENCY FOR PFL

FIELD	IDENTIFIER	DESCRIPTION
1	CLASS	CLASS index
2	PFLPAV FOR AND/ANS	PFLPAV index

PAVEMENT IN AIRCRAFT EQUIVALENCY FOR THICKNESS DESIGN

FIELD	IDENTIFIER	DESCRIPTION
1	CLASS	CLASS index
2	PAVEMENT	PAVEMENT index
3	PFLPAV FOR AND/ANS	PFLPAV index, (0 indicates subgrade)

Both PAVEMENT and PFLPAV indexes are used to define the representative pavement to be used in aircraft equivalency for thickness design.

DESIGN CHARTS FOR LIMITING DEFLECTION AND STRESS

FIELD	IDENTIFIER	DESCRIPTION
1	PAVEMENT	PAVEMENT index
2	PFLPAV	PFLPAV index
3	CLASS	CLASS code
4	LAYER FOR STR/MT	LAYER code for governing stress condition.

```
SITE       TCC
LINE       1
DICTIONARY
          A. TYPE OF PAVEMENT
AC     ASPHALT PAVEMENT
ACC    ASPHALT PAVEMENT WITH CTB
AC/AC  ASPHALT OVERLAY ON EXISTING ASPHALT PAVEMENT
AC/CC  ASPHALT OVERLAY ON EXISTING CONCRETE PAVEMENT
AC/CCAASPHALT OVERLAY ON CONCRETE PAVEMENT
AC/PAVASPHALT OVERLAY
CC     CONCRETE PAVEMENT
CCA    CONCRETE PAVEMENT WITH AGBS
CC/AC  CONCRETE OVERLAY ON EXISTING ASPHALT PAVEMENT
CC/CC  CONCRETE OVERLAY ON EXISTING CONCRETE PAVEMENT
CC/PAVCONCRETE OVERLAY
CCL    ROLLED LEAN CONCRETE BASE PAVEMENT
LCF    LIME-CEMENT-FLYASH PAVEMENT
LCFS   LCF WITH INDUSTRY WASTE AS PAVEMENT AGGREGATE
LCF/ACLCF OVERLAY ON EXISTING ASPHALT PAVEMENT
LCF/CCLCF OVERLAY ON EXISTING CONCRETE PAVEMENT
LC/PAVLCF OVERLAY

          B. PAVEMENT COMPONENTS
AGBS   AGGREGATE BASE COURSE, P-206 TO P-214, P-217
ASBS   ASPHALT BASE COURSE, P-201
ASTB   ASPHALT TREATED BASE, P-215, P-216
ASTCP  ASPHALT TOP COURSE, P-401, P-408
CTB    CEMENT TREATED BASE, P-301, P-304
EXAC   EXISTING ASPHALT LAYER
EXACLVEXISTING ASPHALT OVERLAY
EXBSA  EXISTING BASE OF ASPHALT PAVEMENT
EXBSC  EXISTING BASE OF CONCRETE PAVEMENT
EXPC   EXISTING PORTLAND CEMENT CONCRETE LAYER
EXPCOVEXISTING PORTLAND CEMENT CONCRETE OVERLAY
LCFA   LCF-A MIX WITH NATURAL AGGREGATE
LCFB   LCF-B MIX WITH NATURAL AGGREGATE
LCFC   LCF-C MIX WITH NATURAL AGGREGATE
LCFSA  LCFS-A MIX WITH INDUSTRY WASTE AGGREGATE
LCFSB  LCFS-B MIX WITH INDUSTRY WASTE AGGREGATE
LCFSC  LCFS-C MIX WITH INDUSTRY WASTE AGGREGATE
LTSUB  LIME TREATED SUBGRADE, P-155
PAV    EXISTING PAVEMENT
PCC    PORTLAND CEMENT CONCRETE, P-501
PCCR   REINFORCED PORTLAND CEMENT CONCRETE, P-501, P-610
PFLPAVEXISTING PAVEMENT
RLC    ROLLED LEAN CONCRETE
SSBS   SELECTED SUB-BASE, P-154
SUB    SUBGRADE SUPPORT

          C. PAVEMENT AREA
END    END PORTION OF RUNWAY AT LANDING ROLL
HP     HOLDING PAD
KEEL   CENTER STRIP OF RUNWAY OR TAXIWAY
LOC    LOCATION
MID    MID PORTION OF RUNWAY OR TAXIWAY
RW     RUNWAY
SCFC   SIDE FACTOR FOR UNIFORM PAVEMENT CROSS-SECTION
SIDE   SIDE STRIPS OF RUNWAY OR TAXIWAY
TD     TOUCH DOWN AREA
TM     TERMINAL
TW     TAXIWAY
XTW    CROSS TAXIWAY

          D. FUNCTIONAL CONDITION FOR AIRCRAFT MOVEMENT
A1,A2  COEFFICIENTS OF TRANSFER FUNCTION (TRANSVERSE TO LONG. DEFLECTION)
AANC   EQUIVALENT LOAD REPETITIONS OF ALL AIRCRAFT - DEFLECTION CRITERIA
AANS   EQUIVALENT LOAD REPETITIONS OF ALL AIRCRAFT - STRESS CRITERIA
ANC    EQUIVALENT LOAD REPETITIONS OF ONE TYPE OF AIRCRAFT - DEFLECTION
ANLA   ANTICIPATED SERVICE LIFE IN LOAD REPETITIONS - DEFLECTION CRITERIA
ANS    EQUIVALENT LOAD REPETITIONS OF ONE TYPE OF AIRCRAFT - STRESS CRITERIA
APX    TRANSVERSE DIRECTION PROBABILITY DISTRIBUTION OF WHEEL LOAD
APY    LONGITUDINAL DIRECTION PROBABILITY DISTRIBUTION OF LANDING IMPACT
CC     COEFF. OF CONTACT RIGIDITY
```

```
DEF/D1PAVEMENT FUNCTION GOVERNED BY SURFACE DEFLECTION AND AIRCRAFT VIBRATION
DEF/W2PAVEMENT FUNCTION GOVERNED BY SURFACE DEFLECTION
D1,D2 COEFFICIENTS OF TRANSFER FUNCTION (ELASTIC TO CUMULATIVE DEFORMATION)
D3    COEFFICIENT D2 AT INITIAL STAGE OF TRANSVERSE DEFORMATION FOR PFL STUDY
ILS   INSTRUMENT LANDING SYSTEM
LIGHTSIN PAVEMENT LIGHTING SYSTEM
NORM  NORMAL AIRPORT NAVIGATION SIGNS
NSLP  EFFECTIVE FUNCTIONAL(SERVICE) LIFE OF PAVEMENT, NUMBER OF YEARS
PFL   PRESENT FUNCTIONAL LIFE IN YEARS OF AIRCRAFT MOVEMENT(ANDA/AAND)
PFLPAVEXISTING PAVEMENT FOR PFL ANALYSIS
STR/MTPAVEMENT FUNCTION GOVERNED BY WORKING STRESS AND MAINTENANCE NEEDS
SERVYRDESIGN FUNCTIONAL(SERVICE) LIFE IN YEARS
VISUALVISUAL LANDING SYSTEM
 >5.00 ANDA/AANC>5.
```

E. AIRCRAFT FILE

```
ALF   AIRCRAFT LOAD FACTOR
DI    DYNAMIC INCREMENT OF AIRCRAFT VIBRATION AT PAVEMENT-WHEEL INTERFACE
EFW   OPERATING EMPTY WEIGHT OF AIRCRAFT
ESW   EQUIVALENT SINGLE WHEEL LOAD
ESWL  EQUIVALENT SINGLE WHEEL LOAD
FACTORINFLUENCE FACTOR OF ALL AIRCRAFT WHEELS
FREQ  NATURAL FREQUENCY OF AIRCRAFT GEAR SUPPORT ON PAVEMENT
LRW   LANDING ROLL WEIGHT
MLG   MAIN LANDING GEAR LOAD OF AIRCRAFT
MLRW  MAX. LANDING WEIGHT OF AIRCRAFT
MTOW  MAX. TAKE-OFF WEIGHT OF AIRCRAFT
NWHEELNUMBER OF MLG WHEELS PER AIRCRAFT
OEW   OPERATIONAL EMPTY WEIGHT OF AIRCRAFT
PLF   BOARDING FACTOR
PSI   TIRE PRESSURE
RADILSRADIUS OF CONTACT AREA OF AIRCRAFT MLG WHEEL
RANGE DISTANCE RANGE OF AIRCRAFT(SHORT,MEDIUM,LONG)
RGF   RANGE FACTOR
RPWT  RAMP WEIGHT OF AIRCRAFT
TDW   TOUCH-DOWN WEIGHT
TOW   TAKE-OFF WEIGHT
VEL   VELOCITY OF AIRCRAFT EQUIVALENT TO FULL STATIC LOAD WITHOUT WING LIFT
WGT   WEIGHT OF MLG PER TIRE
XMAX  DISTANCE BETWEEN OUTERMOST WHEELS
XWZ   TRANSVERSE WHEEL SPACING OF THE LANDING GEAR
```

F. MATERIAL FILE

```
ACSTR ACTUAL WORKING TENSILE STRESS
COVAR COEFFICIENT OF VARIANCE - MATERIAL STRENGTH
DRY   DRY BASE
EPAV  E-VALUE OF EXISTING PAVEMENT
ESUB  E-VALUE OF SUBGRADE
E-SUP E-VALUE OF PAVEMENT SUPPORT (SUBGRADE OR EXISTING PAVEMENT)
FATIGCOEFFICIENT OF FATIGUE STRESS (LOG CYCLE)
HSTRS STRESS AT DESIGN LAYER OF PAVEMENT MODEL FROM GELS
INFI  SEMI-INFINITE THICKNESS OF SUPPORT LAYER OF PAVEMENT MODEL
NORM  NORMAL DRY OPERATION
OVSFKLOVERSTRESS FACTOR FOR KEEL OR OTHER UNDEFINED AREA
OVSFSCOVERSTRESS FACTOR FOR SIDES
SIGMA HORIZONTAL STRESS IN PAVEMENT COMPONENT
SIGMATHORIZONTAL TENSILE STRESS IN PAVEMENT COMPONENT
STRESSCONVERSION FACTOR  E-VALUE TO TENSILE STRESS
ULSTR ULTIMATE SAFE TENSILE STRESS
WET   WET BASE, OCCASIONALLY PONDED
WCSTR SAFE WORKING TENSILE STRESS
WZ    SURFACE DEFLECTION OF PAVEMENT
WZERO WZ AT X = 0, Y = 0
ZDEF  SURFACE DEFLECTION OF PAVEMENT MODEL FROM GELS
```

G. COST FILE

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AIRB  ANNUAL INTEREST RATE OF BOND
AMC   ANNUAL MAINTENANCE COST, $/S.Y.
ARCD  ANNUAL RATE OF CASH DISCOUNT
ASCOC RATE OF ANNUAL ESCALATION OF CONSTRUCTION COST
ASCLT COST OF ASPHALT OIL, CAR LOAD PER TON
```

ASCMC RATE OF ANNUAL ESCALATION OF MAINTENANCE NEED
CLHR RATE OF COMMON LABOR PER HOUR
CCAGT COST OF COARSE AGGREGATE PER TON
FIAGT COST OF FINE AGGREGATE PER TON
HLBT COST OF HYDRATED LIME, BULK PER TON
ICC INITIAL CONSTRUCTION COST OF TOTAL PAVEMENT, $/S.Y.
IWFAT COST OF INDUSTRY WASTE FINE AGGREGATE PER TON
LBBM COST OF CONSTRUCTION LUMBER PER BOARD MEASURE
MCC MOBILIZATION AND DEMOBILIZATION COST OF MATERIAL PROCESSING FACILITIES
MCD(N)MCD FOR NORMAL SIZE OF RUNWAY AND TAXIWAY CONSTRUCTION
MCD(S)MCD FOR SMALL SIZE OF CONSTRUCTION PROGRAM
NBL MATURITY OF REVENUE BOND, NUMBER OF YEARS
PCBT COST OF PORTLAND CEMENT, BULK PER TON
PCV PRESENT CASH VALUE OF TOTAL PAVEMENT DURING SERVICE LIFE, $/S.Y.
PZBT COST OF POZZOLAN OR FLYASH, BULK PER TON
RSALB COST OF REINFORCING STEEL (WIRE MESH) PER POUND
SFST COST OF SELECTED FILL SAND PER TON
SLEHR RATE OF SKILLED EQUIPMENT OPERATOR PER HOUR
WAPCV WEIGHTED AVERAGE OF PRESENT CASH VALUE

H. NDT DATA FILE

AREA-MEAN VALUE MINUS ONE STANDARD DEVIATION OF A GROUP OF E-VALUE
C CENTER LINE
CALIB THE CALIBRATION IDENTIFICATION NUMBER
DSM(W)DYNAMIC STIFFNESS MODULUS DEFINED BY WES
DSM(I)F(I)/Z(I) AT FIRST RESONANCE
EVAL MODULUS OF ELASTICITY OF RESPONSE SYSTEM IN NDT PROGRAM
EVALUEMODULUS OF ELASTICITY OF RESPONSE SYSTEM IN NDT PROGRAM
F(I) FORCING FUNCTION, DOUBLE AMPLITUDE IN POUNDS
HSTEP FREQUENCY SCALE OF FREQUENCY RESPONSE PLOT,Z(I)/F(I) VS H(I)
H(I) FREQUENCY OF FORCING FUNCTION IN HZ AT ITH TEST
H(1) H(I) AT FIRST RESONANCE, HZ
L LEFT OF CENTER LINE
NDT NONDESTRUCTIVE TEST
R RIGHT OF CENTER LINE
SURZ STATIC SURFACE DEFLECTION AS COMPUTED BY NDT PROGRAM
Z(I) DYNAMIC RESPONSE OF SUB OR PAV IN INCH AT ITH TEST
Z(N) DYNAMIC RESPONSE AT CUT-OFF HIGH FREQUENCY TEST

I. FORECAST FILE

ADM AVERAGE DAILY MOVEMENT
ADMAPCAVERAGE DAILY MOVEMENT PREPARED BY AIRPORT OPERATOR
ADMATAAVERAGE DAILY MOVEMENT PREPARED BY ATA
ADMFAAAVERAGE DAILY MOVEMENT PREPARED BY FAA
ADMSUGAVERAGE DAILY MOVEMENT SUGGESTED FOR PAVEMENT DESIGN
AID AIRPORT TRAFFIC DISTRIBUTION
AIDAPCAIRPORT TRAFFIC DISTRIBUTION PREPARED BY AIRPORT OPERATOR
AIDSUGAIRPORT TRAFFIC DISTRIBUTION SUGGESTED FOR PAVEMENT DESIGN
AIM AIRCRAFT TRAFFIC MOVEMENTS
FAM FORECAST OF AIRCRAFT MOVEMENT
FAMAPCFORECAST OF AIRCRAFT MOVEMENT PREPARED BY AIRPORT OPERATOR
FAMATAFORECAST OF AIRCRAFT MOVEMENT PREPARED BY AIR TRANSPORT ASSOCIATION
FAMSUGFORECAST OF AIRCRAFT MOVEMENT SUGGESTED FOR PAVEMENT DESIGN
FAM/2 ONE HALF VOLUME OF FAM FOR PAVEMENT DESIGN
FAM*2 DOUBLE VOLUME OF FAM FOR PAVEMENT DESIGN

J. COMPUTER PROGRAMS

CED COMPUTED ENGINEERING DATA
COBEN COST BENEFIT PROGRAM
INPUT SUMMARY OF ALL INPUT PARAMETERS
GELS GENERAL EQUILIBRIUM LAYER SYSTEM PROGRAM
MAFPRTSUMMARY OF FAM STRESSES AND DEFLECTIONS FROM GELS
MAPPRTSUMMARY OF FFL STRESSES AND DEFLECTIONS FROM GELS
MAPRT SUMMARY OF PAVEMENT DESIGN THICKNESSES FROM GELS
NDT NONDESTRUCTIVE TEST PROGRAM
PAVDESPAVEMENT DESIGN PROGRAM
PRDICTSUMMARY OF ALL DICTIONARIES

K. FAA REGIONS

ACE FAA CENTRAL REGION
AEA FAA EASTERN REGION

```
AEL   FAA EUROPEAN REGION
AGL   FAA GREAT LAKES REGION
ANE   FAA NEW ENGLAND REGION
ANW   FAA NORTHWEST REGION
ARM   FAA ROCKY MOUNTAIN REGION
ASO   FAA SOUTHERN REGION
ASW   FAA SOUTHWEST REGION
AWE   FAA WESTERN REGION

        L.  PFLPAV, EXISTING PAVEMENTS
AC1   3 IN. EXAC
AC2   6 IN. EXAC
AC3   9 IN. EXAC
AC4   12 IN. EXAC
AC5   16 IN. EXAC
AC6   20 IN. EXAC
CC1   8 IN. EXPC
CC2   10 IN. EXPC
CC3   12 IN. EXPC
CC4   14 IN. EXPC
CC5   15 IN. EXPC
CC6   16 IN. EXPC
CC7   17 IN. EXPC
OC1   4 IN. EXACOV ON 8 IN. EXPC
OC2   4 IN. EXACOV ON 10 IN. EXPC
OC3   4 IN. EXACOV ON 12 IN. EXPC
OC4   6 IN. EXACOV ON 10 IN. EXPC
OC5   6 IN. EXACOV ON 12 IN. EXPC
OC6   6 IN. EXPCOV ON 10 IN. EXPC
OC7   6 IN. EXPCOV ON 12 IN. EXPC

**
REGIONAL COST VALUES
COST      CODE      DATE       ASO      ANE      AGL      ASW
1         PCBT      11/09/78   43.50    43.00    50.00    52.60
2         FIAGT     11/09/78    4.51     4.75     2.50     4.90
3         CCAGT     11/09/78    5.35     4.00     3.50     7.21
4         ASCLT     11/09/78   80.00    85.00    82.00    83.00
5         HLBT      11/10/78   82.50    82.50    77.00    82.50
6         PCZBT     11/10/78    3.85     4.95     3.30    19.80
7         SFST      11/10/78    3.30     3.30     2.75     3.30
8         IWFAT     11/10/78    2.20     2.20     2.20     2.20
9         RSWLB     11/10/78    .396     .418     .396     .396
10        LBBM      11/05/78    .368     .390     .415     .398
11        CLHR      11/02/78   7.03     9.28    10.88     7.02
12        SLEHR     11/02/78   10.07    13.76    13.80    11.05
**
REGIONAL COST VALUES
COST      CODE      DATE       ARM      ACE      AWE      AEA      ANW
1         PCBT      11/09/78   51.30    46.95    58.00    40.29    58.20
2         FIAGT     11/09/78    7.00     3.25     5.95     5.25     6.95
3         CCAGT     11/09/78    5.00     3.90     5.95     6.20     8.15
4         ASCLT     11/09/78   72.50    75.00    71.00    81.00    75.00
5         HLBT      11/10/78   88.00    82.50    88.00    82.50    88.00
6         PCZBT     11/10/78    5.50     3.85    27.50     4.40    30.80
7         SFST      11/10/78    3.30     2.75     3.85     3.85     4.40
8         IWFAT     11/10/78    2.20     2.20     2.75     2.75     3.30
9         RSWLB     11/10/78    .418     .407     .418     .407     .418
10        LBBM      11/05/78    .340     .420     .362     .344     .315
11        CLHR      11/02/78    8.84    11.20    12.86    12.83    12.07
12        SLEHR     11/02/78   11.05    14.15    16.19    15.25    14.71
**
TYPE      FACILITY  FACILITY   FACILITY  FACILITY  FACILITY
1         RW        RUNWAY
2         TW        TAXIWAY    XTW
3         HP        APRON      GATE      TM
**
BANDWIDTH CODE1     CODE2      RW        TW        HP
1         NORM/VISUAL          40.       16.       16.
2         LIGHTS/ILS           20.       10.       16.
**
```

CI	Rm	Tm	MP
KEEL	.12	.12	.15
SIDE	.18	.18	.18

**

VEL	Rm	Tm	MP
KEEL	145.	50.	50.
SIDE	145.	50.	50.

**

AIRCRAFT	CODE	MTOW MLG WHEEL WHEEL	MLRW WGT X-COORD Y-COORD	OEW PSI	RANGE FREQ	NWHEEL	XMAX
1	B747	710000.	564000.	353000.	LONG		
		.2336	.0584	185.	1.2	16	478.
		.0	-44.	.0	-44.	100.	150.
		106.	150.	-142.	-186.	-142.	-186.
		248.	292.	248.	292.		
		.0	.0	-58.	-58.	.0	.0
		-58.	-58.	63.	63.	121.	121.
		63.	63.	121.	121.		
2	DC10/30	555000.	403000.	264000.	LONG		
		.3772	.0943	170.	1.1	10	474.
		.0	-54.	.0	-54.	366.	420.
		366.	420.	164.	202.		
		.0	.0	64.	64.	0.	0.
		64.	64.	2.	2.		
3	DC10/10	430000.	364000.	235000.	LONG		
		.4700	.1175	170.	1.1	8	474.
		0.	-54.	0.	-54.	366.	420.
		366.	420.				
		0.	0.	64.	64.	0.	0.
		64.	64.				
4	L1011	426000.	358000.	234000.	LONG		
		.4743	.1186	180.	1.1	8	484.
		0.	-52.	0.	-52.	380.	432.
		380.	432.				
		0.	0.	70.	70.	0.	0.
		70.	70.				
5	DC8(B707)	355000.	258000.	159000.	LONG		
		.4808	.1202	185.	1.4	8	282.
		0.	-32.	0.	-32.	218.	250.
		218.	250.				
		0.	0.	55.	55.	0.	0.
		55.	55.				
6	B720	210000.	168000.	128000.	MEDIUM		
		.4800	.1200	145.	1.4	8	295.
		0.	-32.	0.	-32.	231.	263.
		231.	263.				
		0.	0.	49.	49.	0.	0.
		49.	49.				
7	B727-200	172000.	150000.	97000.	MEDIUM		
		.4618	.2309	170.	1.6	4	259.
		0.	-34.	191.	225.		
		0.	0.	0.	0.		
8	B727-100	150000.	132000.	95000.	MEDIUM		
		.4618	.2309	170.	1.6	4	259.
		0.	-34.	191.	225.		
		0.	0.	0.	0.		
9	DC9(B737)	100000.	86000.	65000.	SHORT		
		.4400	.2200	150.	1.4	4	223.
		0.	-26.	171.	197.		
		0.	0.	0.	0.		
10	F27	40000.	36000.	28000.	SHORT		
		.4200	.2100	110.	1.5	4	300.5
		0.	-17.5	265.5	283.		
		0.	0.	0.	0.		

```
11        DCX-200   382000.   310000.   200000.   LONG
                    .4700     .1175     170.      1.1       8        474.
                    0.        -54.      0.        -54.      366.     420.
                    366.      420.
                    0.        0.        64.       64.       0.       0.
                    64.       64.
12        B757      220000.   193000.   145000.   MEDIUM
                    .4700     .1175     158.      1.5       8        319.
                    0.        -34.      0.        -34.      251.     285.
                    251.      285.
                    0.        0.        45.       45.       0.       0.
                    45.       45.
13        B767-200  280000.   255000.   173000.   MEDIUM
                    .4800     .1200     185.      1.2       8        388.
                    0.        -48.      0.        -48.      292.     340.
                    292.      340.
                    0.        0.        56.       56.       0.       0.
                    56.       56.
14        A300B4    347000.   295000.   199000.   MEDIUM
                    .4680     .1155     171.      1.1       8        416.
                    0.        -38.      0.        -38.      340.     378.
                    340.      378.
                    0.        0.        60.       60.       0.       0.
                    60.       60.
15        CONCORDE  376000.   240000.   166000.   XLONG
                    .4760     .1150     184.      1.2       8        330.25
                    0.        -26.25    0.        -26.25    277.75   304.
                    277.75    304.
                    0.        0.        65.5      65.5      0.       0.
                    65.5      65.5
**
TCb       AIRCRAFT TAKE-OFF WEIGHTS
HIGH      AIRCRAFT LOAD FACTOR
          RANGE OF AIRCRAFT
AIRCRAFT  XLONG     LONG      MEDIUM    SHORT
1         710000.   615000.   530000.   530000.
2         555000.   515000.   420000.   420000.
3         430000.   390000.   360000.   360000.
4         426000.   350000.   340000.   340000.
5         355000.   325000.   280000.   280000.
6         220000.   220000.   220000.   200000.
7         170000.   170000.   170000.   157000.
8         150000.   150000.   150000.   135000.
9         100000.   100000.   100000.   100000.
10        50000.    50000.    50000.    50000.
11        350000.   350000.   300000.   300000.
12        218000.   216000.   218000.   198000.
13        270000.   270000.   270000.   248000.
14        333000.   333000.   333000.   303000.
15        355000.   355000.   313000.   313000.
**
TCb       AIRCRAFT TAKE-OFF WEIGHTS
MEDIUM    AIRCRAFT LOAD FACTOR
          RANGE OF AIRCRAFT
AIRCRAFT  XLONG     LONG      MEDIUM    SHORT
1         615000.   530000.   530000.   530000.
2         515000.   420000.   420000.   420000.
3         390000.   360000.   360000.   360000.
4         390000.   340000.   340000.   340000.
5         325000.   280000.   280000.   280000.
6         220000.   220000.   200000.   200000.
7         170000.   170000.   157000.   157000.
8         150000.   150000.   135000.   135000.
9         100000.   100000.   100000.   85000.
10        50000.    50000.    50000.    40000.
11        350000.   300000.   300000.   300000.
12        218000.   218000.   198000.   198000.
13        270000.   270000.   248000.   248000.
14        333000.   333000.   303000.   303000.
15        313000.   313000.   313000.   313000.
**
```

```
FINANCE   AIRE      ARCD      ASCCC     ASCMC     NBL       NSLP
          .08       .10       .09       .02       30.       20.
**
FORECAST  ADM       ATD
FAMSUG    ADMSUG    ATDSUG
FAMAPC    ADMAPC    ATDAPC
FAMATA    ADMATA    ATDATA
**
PFLDI
.12       SMOOTH PAVEMENT SURFACE
.1E       OPERATIONAL SURFACE
.25       UPPER LIMIT OF ROUGHNESS TOLERANCE
.3C       MAJOR REHABILITATION REQUIRED
**
DESIGN    AIRCRAFT  WEIGHT
          7         170000.
**
CLASS     CODE      OVSFKL    OVSFSO    STRESS    FATIST    CCVAR     A1
                    A2        C1        C2        DC
1         LCF       1.0       1.3333    .38       .092      .15       2.80
                    .0125     .54       2.00      .90
2         AC        0.9       1.2       .65       .086      .12       2.30
                    .0170     .46       2.00      1.00
3         CC        1.0       1.3333    .40       .082      .10       2.95
                    .0104     .61       2.00      .62
4         LC/PAV    1.0       1.3333    .38       .092      .15       2.80
                    .0125     .54       2.00      .90
5         AC/PAV    0.9       1.2       .65       .086      .12       2.30
                    .0170     .46       2.00      .90
6         CC/PAV    1.0       1.3333    .40       .082      .10       2.95
                    .0104     .61       2.00      .62
7         CCL       1.0       1.3333    .40       .084      .12       2.80
                    .0125     .58       2.00      .90
8         AC/AC     0.9       1.2       .65       .086      .12       2.30
                    .0170     .46       2.00      1.00
9         AC/CC     1.0       1.3333    .40       .082      .10       2.65
                    .0130     .58       2.00      .90
10        CC/AC     1.0       1.3333    .40       .082      .10       2.95
                    .0104     .61       2.00      .62
11        CC/CC     1.0       1.3333    .40       .082      .10       2.95
                    .0104     .61       2.00      .62
**
```

LAYER	CODE	EVALUE	POISSON	MOD(S)	MOD(N)
1	ASTOP	200000.		.0029	.0016
2	LCFA	1100000.		.0064	.0019
3	LCFB	600000.		.0051	.0015
4	LCFC	400000.		.0051	.0015
5	SUB	8000.		.0009	.0005
6	PAV	60000.		.0009	.0005
7	PCCR	5000000.		.0065	.0032
8	PCC	4000000.		.0054	.0027
9	KLC	1500000.		.0043	.0022
10	CTB	2000000.		.0038	.0019
11	ASBS	150000.		.0026	.0014
12	ASTB	60000.		.0020	.0011
13	AGBS	40000.		.0017	.0010
14	SSBS	20000.		.0015	.0008
15	LTSUB	15000.		.0028	.0015
16	EXPCCV	4500000.		.0	.0
17	EXALCV	180000.		.0	.0
18	EXPC	3000000.		.0	.0
19	EXAC	1400000.		.0	.0
20	EXBSC	30000.		.0	.0
21	EXBSA	50000.		.0	.0
22	PFLPAV	60000.		.0009	.0005

**

LAYER	PCBT	FIAGT	CCAGT	ASCLT	HLBT	PCZBT	SFST
	INFAT	RSWLB	LBBM	CLHR	SLEPR		
1	.0	.0235	.0500	.0051	.0	.0	.0
	.0	.0	.0	.0112	.0217		
2	.0007	.0	.0200	.0	.0020	.0067	.0374
	.0	.0	.0	.0027	.0102		
3	.0006	.0	.0064	.0	.0016	.0074	.0460
	.0	.0	.0	.0027	.0088		
4	.0005	.0	.0	.0	.0013	.0073	.0516
	.0	.0	.0	.0027	.0088		
5	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0048	.0222		
6	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0024	.0111		
7	.0102	.0181	.0433	.0	.0	.0	.0
	.0	.0440	.1430	.0321	.0127		
8	.0102	.0181	.0433	.0	.0	.0	.0
	.0	.0	.1430	.0321	.0127		
9	.0051	.0181	.0433	.0	.0	.0	.0
	.0	.0	.0	.0139	.0171		
10	.0051	.0	.0	.0	.0	.0	.0596
	.0	.0	.0	.0036	.0110		
11	.0	.0235	.0500	.0037	.0	.0	.0
	.0	.0	.0	.0112	.0217		
12	.0	.0	.0	.0025	.0	.0	.0593
	.0	.0	.0	.0042	.0110		
13	.0	.0	.0704	.0	.0	.0	.0
	.0	.0	.0	.0016	.0074		
14	.0	.0	.0	.0	.0	.0	.0651
	.0	.0	.0	.0016	.0074		
15	.0	.0	.0	.0	.0024	.0	.0
	.0	.0	.0	.0036	.0095		
16	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0032	.0127		
17	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0032	.0100		
18	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0032	.0127		
19	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0032	.0100		
20	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0016	.0074		
21	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0016	.0074		
22	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0024	.0111		

**

```
PAVEMENT  CODE      LAYER     THICKNESS EVALUE    POISSON
1         LCF       ASTCP     3.
                    LCFA      6.
                    LCFB      6.
                    LCFC      9.
                    SUB
2         AC        ASTCP     2.
                    ASBS      16.
                    AGBS      6.
                    SUB
3         CC        PCC       12.
                    CTB       6.
                    SSBS      8.
                    SUB
4         LC/PAV    ASTCP     3.
                    LCFA      12.
                    PAV
5         AC/PAV    ASTCP     1.
                    ASBS      8.
                    PAV
6         CC/PAV    PCCR      9.
                    ASTCP     1.
                    PAV
7         CCL       PCC       8.
                    RLC       6.
                    SSBS      6.
                    SUB
8         AC/PAV    ASTCP     1.
                    ASBS      8.
                    PFLPAV
**
ITERATE   PAVEMENT  LAYER     HMIN      HMAX      HSTEP
          1         LCFC      1.        25.       2.
          2         ASBS      1.        31.       2.5
          3         PCC       4.        18.       1.
          4         LCFA      1.        19.       1.5
          5         ASBS      1.        29.       2.
          6         PCCR      4.        18.       1.
          7         RLC       4.        18.       1.
          8         ASBS      1.        29.       2.
**
NEW PAVEMENT ESUB GRID EVALUES
1000.     1500.     2000.     3000.     4000.     6000.     8000.     12000.
16000.    25000.    35000.    50000.    70000.    100000.
**
OVERLAY PAVEMENT EPAV GRID EVALUES
10000.    15000.    20000.    30000.    40000.    60000.    80000.    120000.
160000.   250000.   350000.   500000.   700000.   1000000.
**
PAVEMENT NUMBER     KEEL      SIDE
                    1         1
                    2         2
                    3         3
                    7         7
                    4         4
                    8         8
                    6         6
                    1         8
                    3         8
                    7
**
```

PFLPAV	CODE	LAYER	THICKNESS EVALUE
1	AC1	EXAC	3.
		EXBSA	6.
		SUB	
2	AC2	EXAC	6.
		EXBSA	6.
		SUB	
3	AC3	EXAC	9.
		EXBSA	6.
		SUB	
4	AC4	EXAC	12.
		EXBSA	6.
		SUB	
5	AC5	EXAC	16.
		EXBSA	6.
		SUB	
6	AC6	EXAC	20.
		EXBSA	6.
		SUB	
7	CC1	EXPC	8.
		EXBSC	8.
		SUB	
8	CC2	EXPC	10.
		EXBSC	8.
		SUB	
9	CC3	EXPC	12.
		EXBSC	8.
		SUB	
10	CC4	EXPC	14.
		EXBSC	8.
		SUB	
11	CC5	EXPC	15.
		EXBSC	8.
		SUB	
12	CC6	EXPC	16.
		EXBSC	8.
		SUB	
13	CC7	EXPC	17.
		EXBSC	8.
		SUB	
14	CC1	EXACCV	4.
		EXPC	8.
		EXBSC	8.
		SUB	
15	CC2	EXACCV	4.
		EXPC	10.
		EXBSC	8.
		SUB	
16	CC3	EXACCV	4.
		EXPC	12.
		EXBSC	8.
		SUB	
17	CC4	EXACCV	6.
		EXPC	10.
		EXBSC	8.
		SUB	
18	CC5	EXACCV	6.
		EXPC	12.
		EXBSC	8.
		SUB	
19	CC6	EXPCCV	6.
		EXACCV	1.
		EXPC	10.
		EXBSC	8.
		SUB	
20	CC7	EXPCCV	6.
		EXACCV	1.
		EXPC	12.
		EXBSC	8.
		SUB	

**

```
PFLPAV ESLB GRID EVALUES
2000.     3000.     4000.     6000.     8000.     12000.    16000.    25000.
35000.    45000.    70000.    100000.
**
PFLPAV    CLASS     LAYER FOR STR/MT
1         AC        EXBSA
2         AC        EXAC
3         AC        EXAC
4         AC        EXAC
5         AC        EXAC
6         AC        EXAC
7         CC        EXPC
8         CC        EXPC
9         CC        EXPC
10        CC        EXPC
11        CC        EXPC
12        CC        EXPC
13        CC        EXPC
14        AC/CC     EXPC
15        AC/CC     EXPC
16        AC/CC     EXPC
17        AC/CC     EXPC
18        AC/CC     EXPC
19        CC/CC     EXPC
20        CC/CC     EXPC
**
CLASS     PFLPAV FOR AND/ANS
2         3
3         9
9         16
11        19
**
CLASS     PAVEMENT  PFLPAV FOR AND/ANS
1         1         0
2         2         0
3         3         0
4         4         0
5         5         0
6         6         0
7         7         0
8         8         3
9         8         9
**
PAVEMENT  PFLPAV    CLASS     LAYER FOR STR/MT
1         0         LCF       LCFC
2         0         AC        ASBS
3         0         CC        PCC
4         0         LC/PAV    LCFA
5         0         AC/PAV    ASBS
6         0         CC/PAV    PCCR
7         0         CGL       RLC
8         1         AC/AC     EXAC
8         2         AC/AC     EXAC
8         12        AC/CC     EXPC
8         14        AC/CC     EXPC
8         9         AC/CC     EXPC
8         11        AC/CC     EXPC
8         13        AC/CC     EXPC
8         17        AC/CC     EXPC
8         3         AC/AC     EXAC
8         4         AC/AC     EXAC
8         5         AC/AC     EXAC
8         10        AC/CC     EXPC
8         6         AC/AC     EXAC
8         7         AC/CC     EXPC
8         8         AC/CC     EXPC
8         15        AC/CC     EXPC
8         16        AC/CC     EXPC
8         18        AC/CC     EXPC
8         19        AC/CC     EXPC
8         20        AC/CC     EXPC
**
```

COMPUTED DATA INPUTS

GELS/NDT3 for each PFLPAV in design charts control group data.

FIELD	DESCRIPTION
1	number of thickness
2	number of PFLPAV E-values

Continuation card or cards

1 to 8 surface deflection of PFLPAV under a single wheel having tire pressure = 200 psi and radius 9 inches
number of cards = the integer of (number of E-values -1)/8 plus 1.

Continuation card or cards

1 to 8 tensile stress in the governing layer under the same single wheel for deflection.
number of cards = the integer of (number of E-values -1)/8 plus 1.

GELS/PFLN for each PFLPAV in design charts control group data.

FIELD	DESCRIPTION
1	number of layer thickness
2	number of PFLPAV E-values

Continuation card or cards

1 to 8 surface deflection of PFLPAV under all wheels of design aircraft.
number of cards = the integer of (number of E-values -1)/8 plus 1.

Continuation card or cards

1 to 8 tensile stress in governing layer under all wheels of design aircraft.
number of cards = the integer of (number of E-values -1)/8 plus 1.

GELS/PFLD for each CLASS under Design Aircraft.

FIELD	DESCRIPTION
1	surface deflection of PFLPAV under all wheels of design aircraft
2	tensile stress in governing layer of PFLPAV under all wheels of design aircraft.

Continuation Card

1	surface deflection of PFLPAV under one wheel of design aircraft
2	tensile stress in governing layer of PFLPAV under one wheel of design aircraft.

Continuation of 2-card sets for classes defined in the default file.

GELS/PFL for each PFLPAV under operational aircraft.

FIELD	DESCRIPTION
1	number of AIRCRAFT

for each AIRCRAFT, RANGE, and LOAD FACTOR

1	surface deflection of PFLPAV under all wheels of TOW
2	surface deflection of PFLPAV under all wheels of LRW
3	surface deflection of PFLPAV under all wheels of TDW
4	layer stress of PFLPAV under all wheels of TOW
5	layer stress of PFLPAV under all wheels of LRW
6	layer stress of PFLPAV under all wheels of TDW

Continuation card in same format shows surface deflection and stress under one wheel of AIRCRAFT.

The data set for each aircraft consists of eight subsets of data for four ranges of operation and two classifications of load factor, in the following orders:

RANGE	LOAD FACTOR
XLONG	HIGH
LONG	HIGH
MEDIUM	HIGH
SHORT	HIGH
XLONG	MEDIUM
LONG	MEDIUM
MEDIUM	MEDIUM
SHORT	MEDIUM

For each PFLPAV, the total number of data sets is equal to the number of aircraft defined.

GELS/FAMD for each PAVEMENT under design aircraft.

FIELD	DESCRIPTION
1	surface deflection of PAVEMENT under all wheels of design aircraft weight.
2	layer stress of PAVEMENT or PFLPAV under all wheels of design aircraft.

Continuation card, same as above, except surface deflection or layer stress under one wheel of design aircraft.

GELS/FAM for each PAVEMENT under operational aircraft.

FIELD	DESCRIPTION
1	number of AIRCRAFT

for each AIRCRAFT, RANGE, and LOAD FACTOR

1	surface deflection under wheel (0,0) due to all wheels of TOW
2	surface deflection under wheel (0,0) due to all wheels of LRW
3	surface deflection under wheel (0,0) due to all wheels of TDW
4	layer stress under wheel (0,0) due to all wheels of TDW
5	layer stress under wheel (0,0) due to all wheels of LRW
6	layer stress under wheel (0,0) due to all wheels of TDW

Continuation card is exactly the same except surface deflection or layer stress under one wheel of operational aircraft. There are sets of data for each class of pavements. Subset data for each aircraft are similar to GELS/PFL.

GELS/HDES for each PAVEMENT/PFLPAV in design charts

FIELD	DESCRIPTION
1	number of layer thicknesses to be iterated
2	number of E-values

for each thickness

1 to 8	surface deflection under wheel (0,0) due to all wheels of design aircraft number of cards = the integer of (number of E-values -1)/8 plus 1.

Number of sets = number of layer thickness to be iterated.

for each thickness

1 to 8	tensile stress in governing layer under wheel (0,0) due to all wheels of design aircraft. number of cards = the integer of (number of E-values -1)/8 plus 1.

There are sets of data for each PAVEMENT/PFLPAV combination defined in the default input file for design charts.

```
GELS       ACT3
 1         12
0.484288   0.367159   0.301377   0.228033   0.187158   0.142052   0.117210   0.087903
0.071678   0.062120   0.049477   0.042216
 329.908    279.014    243.886    194.054    159.736    113.800     83.746     42.653
  16.847      0.648    -21.661    -34.545
 1         12
0.368822   0.281887   0.232806   0.177917   0.147254   0.113310   0.094562   0.072338
0.059939   0.052633   0.042873   0.037216
 170.014    153.589    141.874    125.489    114.138     98.910     88.925     75.287
  66.781     61.303     54.405     50.456
 1         12
0.294674   0.227017   0.188631   0.145447   0.121211   0.094291   0.079383   0.061663
0.051741   0.045852   0.037593   0.033438
 175.601    159.770    148.417    132.552    121.569    106.780     96.992     83.400
  74.704     69.171     61.453     56.954
 1         12
0.245421   0.190063   0.158862   0.123725   0.103913   0.081717   0.069420   0.054751
0.046514   0.041509   0.035006   0.031248
 149.226    136.647    127.380    114.182    104.935     92.381     84.006     72.243
  64.600     59.670     52.666     48.483
 1         12
0.203225   0.157270   0.131935   0.103767   0.087956   0.070267   0.060381   0.048526
0.041556   0.037966   0.032608   0.029364
 112.770    104.081     97.458     87.802     80.799     71.076     64.479     55.082
  48.884     44.835     38.996     35.439
 1         12
0.177095   0.136452   0.114454   0.090450   0.077176   0.062432   0.054204   0.044221
0.038612   0.035162   0.030736   0.028093
  85.163     78.919     74.216     67.173     61.952     54.500     49.322     41.803
  36.762     33.437     28.587     25.594
 1         12
0.155651   0.119252   0.097571   0.074122   0.061255   0.047058   0.039176   0.029737
0.024414   0.021240   0.016982   0.014496
 674.386    831.555    800.047    753.566    719.454    671.199    638.018    590.419
 558.837    538.014    507.315    487.760
 1         12
0.136819   0.100917   0.081700   0.061259   0.050279   0.038428   0.031955   0.024257
0.019912   0.017308   0.013790   0.011718
 625.499    595.435    574.988    546.057    525.038    494.569    472.812    440.188
 417.590    402.300    379.236    364.249
 1         12
0.120844   0.088982   0.071668   0.053136   0.043252   0.032720   0.027073   0.020476
0.016751   0.014590   0.011606   0.009845
 473.064    447.821    431.885    410.922    396.456    375.952    361.334    338.753
 322.584    311.287    293.715    281.942
 1         12
0.107609   0.079978   0.064484   0.047614   0.038529   0.028869   0.023730   0.017809
0.014553   0.012627   0.010033   0.008507
 373.866    351.047    337.079    319.658    308.421    293.267    282.735    266.622
 254.862    246.459    233.136    223.902
 1         12
0.101460   0.076013   0.061462   0.045408   0.036691   0.027390   0.022446   0.016766
0.013665   0.011840   0.009398   0.007964
 336.721    314.906    301.564    285.208    274.852    261.307    252.105    238.198
 228.072    220.840    209.173    201.007
 1         12
0.095635   0.072248   0.058649   0.043424   0.035077   0.026117   0.021344   0.015866
0.012853   0.011157   0.008838   0.007482
 305.510    284.601    271.793    256.205    246.516    234.143    225.932    213.737
 204.527    198.630    188.414    181.194
 1         12
0.089927   0.068652   0.055999   0.041619   0.033637   0.025006   0.020388   0.015052
0.012226   0.010598   0.008345   0.007056
 278.824    258.937    246.613    231.648    222.451    210.939    203.470    192.557
 184.859    179.313    170.327    163.932
 1         12
0.155010   0.115945   0.095108   0.072723   0.060522   0.047142   0.039747   0.030909
0.026004   0.022947   0.018950   0.016016
 746.595    709.339    682.465    643.016    613.978    572.531    543.713    501.941
 473.581    455.470    428.103    410.637
```

GELS PFLN

1 12
0.555589 0.435952 0.347836 0.283454 0.202959 0.149208 0.120586 0.087811
0.070091 0.059786 0.046422 0.038879
286.138 239.531 206.531 182.243 132.600 93.809 68.794 34.874
13.668 0.400 -17.907 -28.456

1 12
0.458424 0.364550 0.291804 0.213447 0.171356 0.126506 0.102631 0.075324
0.060584 0.052053 0.040917 0.034616
150.673 133.067 121.115 105.222 94.743 81.307 72.858 61.758
55.106 51.104 45.937 43.264

1 12
0.426572 0.314005 0.252549 0.185902 0.145853 0.111211 0.090568 0.066875
0.054111 0.046734 0.037060 0.031547
163.882 145.270 132.485 115.398 104.112 89.614 80.454 68.294
60.860 56.281 50.128 46.711

1 12
0.374568 0.276627 0.223386 0.165583 0.134180 0.100251 0.082066 0.061095
0.049722 0.043075 0.034450 0.029595
145.454 129.577 118.421 103.203 92.985 79.706 71.233 59.867
52.827 48.438 42.438 39.017

1 12
0.327133 0.241420 0.195402 0.145826 0.118964 0.089959 0.074326 0.056144
0.046221 0.040445 0.032851 0.028535
116.147 104.070 95.472 83.455 75.167 64.127 56.936 47.120
40.934 37.027 31.600 28.440

1 12
0.294868 0.216854 0.175411 0.131163 0.107392 0.081815 0.067881 0.051820
0.043017 0.037865 0.031083 0.027211
92.591 83.104 76.433 67.064 60.456 51.552 45.591 37.279
31.936 28.519 23.706 20.859

1 12
0.281023 0.203125 0.161857 0.118136 0.094735 0.069662 0.056175 0.040528
0.031969 0.026976 0.020405 0.016653
956.948 884.534 834.833 766.353 718.849 654.539 611.755 551.937
513.231 488.143 451.762 429.071

1 12
0.250859 0.180265 0.142850 0.103473 0.082034 0.060557 0.048795 0.035215
0.027787 0.023435 0.017681 0.014373
717.437 662.281 626.239 578.037 545.166 500.604 470.336 426.877
397.684 378.278 349.440 331.076

1 12
0.228151 0.164132 0.129834 0.093507 0.074328 0.054136 0.043478 0.031282
0.024656 0.020778 0.015660 0.012710
564.803 518.405 488.954 451.167 426.335 393.154 370.978 338.700
316.529 301.513 278.687 263.650

1 12
0.208782 0.151230 0.119843 0.086214 0.068336 0.049505 0.039594 0.028326
0.022253 0.018727 0.014081 0.011412
461.606 421.064 395.503 363.411 342.975 316.445 299.050 274.043
256.903 245.080 226.949 214.784

1 12
0.195813 0.145414 0.115480 0.083161 0.065887 0.047640 0.038033 0.027123
0.021266 0.017865 0.013416 0.010859
421.844 383.659 359.710 329.637 310.627 286.410 270.649 248.176
232.883 222.357 206.112 195.078

1 12
0.191227 0.135909 0.111388 0.080376 0.063685 0.045994 0.036663 0.026071
0.020396 0.017113 0.012818 0.010360
387.810 352.004 329.264 300.978 283.134 260.564 246.168 225.769
211.893 202.466 187.813 177.876

1 12
0.182950 0.134623 0.107508 0.077787 0.061681 0.044520 0.035447 0.025145
0.019629 0.016444 0.012282 0.009909
357.944 324.672 303.164 276.300 259.494 238.263 224.903 206.248
193.636 185.049 171.721 162.743

1 12
0.274037 0.198258 0.158297 0.115984 0.093435 0.069371 0.056466 0.041559
0.033382 0.028061 0.022264 0.018668
835.510 770.432 726.433 666.231 624.513 567.858 529.959 476.646
441.751 419.027 385.985 365.344

```
GELS       PFLD
 0.145853                          104.112
 0.094815                           98.798
 0.074328                          426.335
 0.033669                          310.996
 0.075619                          382.239
 0.035608                          271.648
 0.006567                          267.528
 0.026211                          181.862
**
GELS       PFL        DEFAULT
15
 0.27740   0.22291    0.32762       94.4       85.2       101.0
 0.100598  0.082477   0.116538    106.005      94.392     114.903
 0.242127  0.201646   0.296502     88.730      80.556      97.120
 0.088991  0.075189   0.106807     98.738      89.178     109.579
 0.210056  0.182630   0.266666     82.693      76.674      93.100
 0.078084  0.068679   0.097742     91.293      84.072     104.292
 0.210056  0.182630   0.266666     82.693      76.674      93.100
 0.078084  0.068679   0.097742     91.293      84.072     104.292
 0.242127  0.201646   0.296502     88.730      80.556      97.120
 0.088991  0.075189   0.106807     98.738      89.178     109.579
 0.210056  0.182630   0.266666     82.693      76.674      93.100
 0.078084  0.068679   0.097742     91.293      84.072     104.292
 0.210056  0.182630   0.266666     82.693      76.674      93.100
 0.078084  0.068679   0.097742     91.293      84.072     104.292
 0.210056  0.182630   0.266666     82.693      76.674      93.100
 0.078084  0.068679   0.097742     91.293      84.072     104.292
 0.24836   0.18417    0.26695     101.8        89.8       104.8
 0.121702  0.092233   0.130971    112.190      97.288     116.140
 0.231505  0.176113   0.257061     99.094      87.867     103.133
 0.113986  0.088535   0.125635    108.724      95.026     113.901
 0.191372  0.156671   0.228438     91.377      82.886      98.573
 0.095551  0.079451   0.112570     99.215      89.191     108.066
 0.191372  0.156671   0.228438     91.377      82.886      98.573
 0.095551  0.079451   0.112570     99.215      89.191     108.066
 0.231505  0.176113   0.257061     99.094      87.867     103.133
 0.113986  0.088535   0.125635    108.724      95.026     113.901
 0.191372  0.156671   0.228438     91.377      82.886      98.573
 0.095551  0.079451   0.112570     99.215      89.191     108.066
 0.191372  0.156671   0.228438     91.377      82.886      98.573
 0.095551  0.079451   0.112570     99.215      89.191     108.066
 0.191372  0.156671   0.228438     91.377      82.886      98.573
 0.095551  0.079451   0.112570     99.215      89.191     108.066
 0.22104   0.18915    0.27570      101.6        95.2       110.1
 0.118031  0.102021   0.144827    110.563     102.802     121.544
 0.201736  0.176453   0.257164     97.855      92.221     107.498
 0.108324  0.095665   0.135825    106.020      99.280     118.100
 0.187268  0.166922   0.243185     94.755      89.812     105.341
 0.101054  0.090853   0.128598    102.287      96.454     115.316
 0.187263  0.166922   0.243185     94.755      89.812     105.341
 0.101054  0.090853   0.128598    102.287      96.454     115.316
 0.201736  0.176453   0.257164     97.855      92.221     107.498
 0.108324  0.095665   0.135825    106.020      99.280     118.100
 0.187268  0.166922   0.243185     94.755      89.812     105.341
 0.101054  0.090853   0.128598    102.287      96.454     115.316
 0.187268  0.166922   0.243185     94.755      89.812     105.341
 0.101054  0.090853   0.128598    102.287      96.454     115.316
 0.187268  0.166922   0.243185     94.755      89.812     105.341
 0.101054  0.090853   0.128598    102.287      96.454     115.316
 0.21698   0.18834    0.27145      107.0        99.6       116.4
 0.118834  0.102203   0.145152    114.252     105.664     125.581
 0.201687  0.175229   0.255163    103.268      96.661     113.752
 0.110019  0.096569   0.137080    109.895     102.348     122.317
 0.177734  0.159621   0.232270     97.340      92.220     109.635
 0.097838  0.088560   0.125600    103.117      97.353     117.350
 0.177734  0.159621   0.232270     97.340      92.220     109.635
 0.097838  0.088560   0.125600    103.117      97.353     117.350
 0.201687  0.175229   0.255163    103.268      96.661     113.752
 0.110019  0.096569   0.137080    109.895     102.348     122.317
```

GELS	FAMD		
C.075922			57.048
C.036138			67.516
C.110496			77.386
C.062246			63.645
C.067467			387.126
C.029582			275.873
C.021224			154.748
C.013756			137.406
C.037566			45.802
C.029955			47.463
C.017020			418.075
C.009718			356.498
C.071512			245.629
C.031938			173.477
C.110568			66.536
C.062426			54.492
C.077025			316.663
C.038262			216.218

**

GELS	FAM	DEFAULT			
15					
C.206893	C.165458	C.245164	100.269	80.281	118.757
C.038377	C.031616	C.044391	71.424	57.332	84.301
C.179956	C.149604	C.221511	87.283	72.591	107.335
C.033976	C.029044	C.040713	62.278	51.870	76.361
C.155855	C.135452	C.200172	75.631	65.581	97.035
C.030040	C.026811	C.037249	54.026	46.978	69.164
C.155855	C.135452	C.200172	75.631	65.581	97.035
C.030040	C.026811	C.037249	54.026	46.978	69.164
C.179956	C.149604	C.221511	87.283	72.591	107.335
C.033976	C.029044	C.040713	62.278	51.870	76.361
C.155855	C.135452	C.200172	75.631	65.581	97.035
C.030040	C.026811	C.037249	54.026	46.978	69.164
C.155855	C.135452	C.200172	75.631	65.581	97.035
C.030040	C.026811	C.037249	54.026	46.978	69.164
C.155855	C.135452	C.200172	75.631	65.581	97.035
C.030040	C.026811	C.037249	54.026	46.978	69.164
C.164635	C.121438	C.178687	108.165	79.810	117.219
C.045882	C.035189	C.049350	88.446	65.471	95.672
C.153310	C.115910	C.170510	100.770	76.204	112.001
C.043111	C.033747	C.047301	82.509	62.511	91.505
C.126289	C.102771	C.151325	83.077	67.437	99.430
C.030405	C.030313	C.042671	68.092	55.434	81.428
C.126289	C.102771	C.151325	83.077	67.437	99.430
C.030405	C.030313	C.042671	68.092	55.434	81.428
C.153310	C.115910	C.170510	100.770	76.204	112.001
C.043111	C.033747	C.047301	82.509	62.511	91.505
C.126289	C.102771	C.151325	83.077	67.437	99.430
C.030405	C.030313	C.042671	68.092	55.434	81.428
C.126289	C.102771	C.151325	83.077	67.437	99.430
C.030405	C.030313	C.042671	68.092	55.434	81.428
C.126289	C.102771	C.151325	83.077	67.437	99.430
C.030405	C.030313	C.042671	68.092	55.434	81.428
C.138775	C.118581	C.174366	102.730	87.791	128.424
C.044595	C.038848	C.054801	85.605	73.232	106.483
C.126538	C.110386	C.162084	93.753	81.727	119.821
C.041113	C.036445	C.051204	78.146	68.182	99.468
C.117351	C.104159	C.152951	86.869	77.091	113.184
C.038493	C.034602	C.048586	72.472	64.365	94.119
C.117351	C.104159	C.152951	86.869	77.091	113.184
C.038493	C.034602	C.048586	72.472	64.365	94.119
C.126538	C.110386	C.162084	93.753	81.727	119.821
C.041113	C.036445	C.051204	78.146	68.182	99.468
C.117351	C.104159	C.152951	86.869	77.091	113.184
C.038493	C.034602	C.048586	72.472	64.365	94.119
C.117351	C.104159	C.152951	86.869	77.091	113.184
C.038493	C.034602	C.048586	72.472	64.365	94.119
C.117351	C.104159	C.152951	86.869	77.091	113.184
C.038493	C.034602	C.048586	72.472	64.365	94.119

CELS	HDES						
13	14						
0.488257	0.352268	0.279715	0.202867	0.162103	0.118769	0.095545	0.070528
0.056548	0.040968	0.032062	0.024857	0.019701	0.015577		
0.466462	0.332726	0.263991	0.190932	0.152178	0.111150	0.089258	0.065917
0.053258	0.038455	0.030246	0.023562	0.018769	0.014927		
0.433486	0.314531	0.249815	0.180511	0.143645	0.104633	0.083938	0.061926
0.050118	0.036332	0.028668	0.022453	0.017988	0.014400		
0.407715	0.297763	0.237210	0.171696	0.136604	0.099398	0.079685	0.058757
0.047654	0.034712	0.027544	0.021737	0.017560	0.014197		
0.382628	0.281772	0.225341	0.163644	0.130309	0.094779	0.075922	0.055976
0.045378	0.033129	0.026376	0.020915	0.016989	0.013824		
0.359126	0.266428	0.214044	0.156147	0.124534	0.090616	0.072544	0.053418
0.043276	0.031660	0.025192	0.020024	0.016314	0.013321		
0.336902	0.251871	0.203377	0.149181	0.119279	0.086939	0.069608	0.051220
0.041473	0.030280	0.024162	0.019246	0.015721	0.012880		
0.316525	0.238354	0.193471	0.142831	0.114611	0.083818	0.067201	0.049502
0.040107	0.029332	0.023461	0.018757	0.015392	0.012683		
0.297888	0.225753	0.184157	0.136856	0.110201	0.080982	0.065062	0.048021
0.038950	0.028546	0.022888	0.018367	0.015212	0.012619		
0.281069	0.214222	0.175562	0.131580	0.106335	0.078533	0.063294	0.046888
0.038121	0.028059	0.022586	0.018225	0.015121	0.012629		
0.265685	0.203357	0.167331	0.125997	0.102411	0.076031	0.061459	0.045671
0.037196	0.027441	0.022142	0.017923	0.014926	0.012525		
0.251670	0.193275	0.159564	0.120814	0.098599	0.073579	0.059653	0.044468
0.036275	0.026818	0.021665	0.017573	0.014672	0.012352		
0.238930	0.183912	0.152251	0.115819	0.094866	0.071133	0.057833	0.043237
0.035518	0.026143	0.021144	0.017166	0.014351	0.012103		
263.074	241.033	227.360	207.973	194.596	175.634	161.955	142.414
128.446	107.039	91.322	75.275	60.850	46.490		
236.018	216.969	203.440	185.876	173.780	157.147	145.133	128.010
115.650	96.544	82.336	67.733	54.596	41.540		
210.756	191.135	178.611	162.455	151.803	137.199	126.944	112.289
101.681	85.107	72.658	59.779	48.133	36.567		
186.799	168.610	156.957	142.086	132.474	119.599	110.709	98.147
89.096	74.824	64.027	52.752	42.501	32.279		
166.433	149.703	139.045	125.286	116.439	104.905	97.048	86.140
78.314	66.010	56.635	46.765	37.728	28.670		
149.293	134.058	124.110	111.461	103.278	92.748	85.728	76.070
69.262	58.545	50.354	41.683	33.689	25.637		
134.740	120.911	111.816	100.151	92.516	82.766	76.378	67.695
61.662	52.227	45.025	37.364	30.261	23.066		
122.176	109.801	101.483	90.548	83.576	74.498	68.555	60.725
55.285	46.882	40.491	33.678	27.331	20.873		
111.274	100.285	92.639	82.658	76.122	67.634	62.116	54.865
49.916	42.347	36.613	30.510	24.810	18.984		
101.737	91.963	85.075	75.845	69.726	61.823	56.652	49.919
45.304	38.468	33.284	27.777	22.627	17.346		
93.349	84.655	78.471	69.971	64.280	56.869	52.026	45.656
41.476	35.131	30.408	25.403	20.724	15.915		
85.944	78.190	72.610	64.806	59.550	52.616	48.037	42.082
38.132	32.255	27.914	23.335	19.057	14.657		
79.368	72.431	67.400	60.284	55.395	48.870	44.577	38.952
35.237	29.754	25.732	21.517	17.588	13.544		
13	14						
1.036795	0.756605	0.604156	0.439666	0.351083	0.256292	0.205626	0.151750
0.123124	0.090343	0.072663	0.058779	0.049136	0.041617		
0.873196	0.640084	0.513327	0.374871	0.299817	0.219164	0.175941	0.129956
0.105542	0.077667	0.062086	0.050901	0.042676	0.036285		
0.753848	0.554708	0.445934	0.327360	0.262740	0.192834	0.155150	0.114889
0.093449	0.068910	0.055697	0.045317	0.038093	0.032464		
0.666159	0.490969	0.395180	0.291309	0.234705	0.173272	0.139577	0.104212
0.085074	0.063064	0.051185	0.041838	0.035325	0.030241		
0.606155	0.443537	0.356524	0.263033	0.212406	0.157555	0.127774	0.095659
0.078591	0.058465	0.047688	0.039158	0.033169	0.028511		
0.560519	0.408517	0.327684	0.241520	0.195245	0.145387	0.118381	0.089225
0.073502	0.055287	0.045403	0.037550	0.032011	0.027703		
0.524580	0.381368	0.305201	0.224512	0.181440	0.135341	0.110456	0.083726
0.069281	0.052427	0.043260	0.035977	0.030864	0.026850		
0.494525	0.359307	0.287188	0.210739	0.170122	0.126854	0.103731	0.078867
0.065474	0.049909	0.041323	0.034535	0.029816	0.026058		

DESCRIPTION OF SYSTEM OUTPUTS

TITLE PAGE Print the name of user, job code, job name, TCC site and line information. The top and bottom margin of title page is 2 and 1 inch respectively.

PRINT/DICTIONARY Under PRDICT page counter, upper right corner of the page, entire dictionary to be printed in alphabetical order, and in groups.

PRINT/INPUTS Lists the input cards

1. Program control cards;
2. Job inputs - NDT data processing;
3. Job inputs - thickness design and cost-benefit analysis.

RUN/NDT1/PLOT Under NDT1 page counter, data processing in sequence starts from the first set of each NDT data group and then the first card of each test number in NDT machine data;

1. Summary of NDT data on SUB for statistical correlation of E and DSM, if there are NDT and DSM data on subgrade;
2. Summary of NDT data on PAV for statistical correlation of E and DSM if there are NDT and DSM data on existing pavements;
3. Sorted by test number;
4. Sorted by location of test;
5. Sorted by date/calibration;
6. Calibration factor - input listings and computed factors;
7. Grid identification - input listing;
8. Test identification - only valid test numbers are printed.

Under DFPLOT page counters, if PLOT is specified on RUN card, the machine data of each test in sequence of input order will be plotted on a sheet containing not more than five test sets.

RUN/NDT2 Under NDT2 page counter,

1. For each PLOT card, the E-value data group will be plotted on one or more pages with the heading specified.
2. If AVERAGE is specified on GRID card, the mean value minus one standard deviation of that group, coded as AREA-E, will also be plotted. At the completion of NDT2 plotting, the computer operation will be temporarily interrupted. The AREA-E values shall be compiled for subsequent NDT3, PFL and PAVDES operations.

RUN/NDT3 Under NDT/3 page counter,

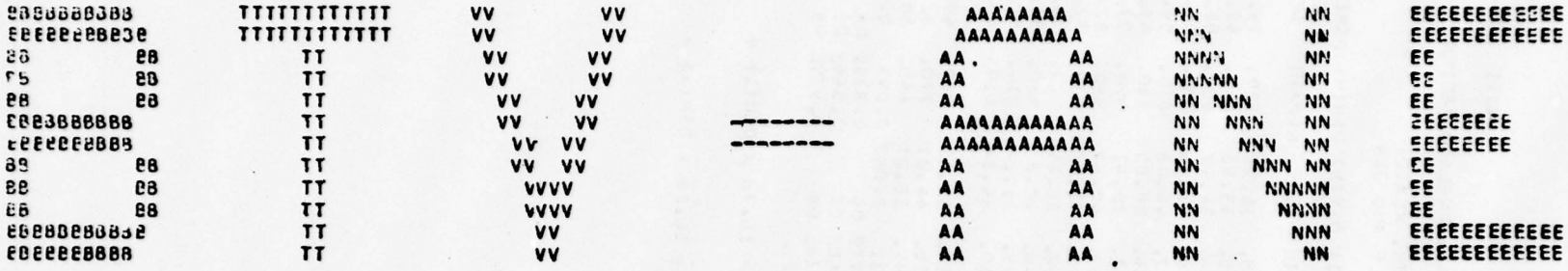
1. Listing of existing pavements in simplified group of PFLPAV for PFL analysis,
2. NDT inventory file showing four E-values for each facility segment.

RUN/PFL

1. Under ATM page counter, listing aircraft movements which is equal to the product of first year average daily movement and airport traffic distribution for each facility segment.
2. Under OPWGT page counter, the operational weights of all aircraft will be listed for the specified RANGE and LOAD FACTOR on the input cards. If the input range and load factor are blocks, default values will be used to analyze the aircraft movement defined in the ADM data group.
3. Under AND/ANS page counter, equivalent single type aircraft operation will be listed for each class and facility to be designed. For each class of pavement, only the first two facilities are printed.
4. Under PFL page counter, summary of present functional life is listed. The service life reflecting aircraft riding quality is shown under "Governed by DEF/DI" while that reflecting maintenance needs is given under "Governed by STR/MT". For any anticipated service life longer than five years, the listing shows only >5.00.

RUN/PAVDES

1. Under ATM page counter, listing aircraft movements which is equal to the product of average daily movement and airport distribution for each facility segment during the design service life in intervals of 5, 10, 15 and/or 20 years.
2. Under OPWGT page, the operational weights of all aircraft will be listed. It is similar to, but not necessary the same, that shown under "RUN PFL".
3. Under AND/ANS page counter, equivalent single type aircraft operation will be listed. The format is similar to that shown under "RUN PFL".
4. Under CED page counter, the computed engineering data relating to aircraft load repetitions, NDT E-value of subgrade deflection, stress limits, and thickness analysis to two drainage and three traffic conditions are tabulated. There are four new pavements, LCF, AC, CC and CCL, and three overlays, LC/PAV, CC/PAV and AC/PAV. The composition of existing pavement coded as PFLPAV, have been used in the design of asphalt overlay AC/PAV.
5. Under PAV page counter, the pavement data relating to functional requirements, governing condition of design and cost elements are tabulated. Similar to CED listing, seven types of pavement are compiled.
6. Under COBEN page counter, the results of cost-benefit analysis are listed. This is the summary of summaries of the PAVBEN computer operation.



BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

NONDESTRUCTIVE PAVEMENT EVALUATION

A PARTIAL FULFILLMENT OF THE FAA VALIDATION PROGRAM BY NAI C. YANG AND ASSOCIATES, ENGINEERS, P. C.

THIS IS A PROPRIETARY PROGRAM DEVELOPED BY NAI C. YANG AND ASSOCIATES, ENGINEERS, PC PRIOR TO FAA VALIDATION. THE USE OF THIS COMPUTER PROGRAM SHALL BE CONFINED TO THOSE APPROVED BY NAI C. YANG, AND ALSO, THE FAA UNTIL THE PROGRAM OF NONDESTRUCTIVE EVALUATION OF CIVIL AIRPORT PAVEMENTS IS OFFICIALLY ADOPTED AND IMPLEMENTED.

USER: H. TOMITA SITE: TCC CREATED AT: 20:06:09 JAN 23, 1979

THE FAA UNDER THE PRESENT CONDITION ASSUMES NO RESPONSIBILITIES NOR OBLIGATIONS FROM THE USE OF THE PROGRAM AND THE INTERPRETATION OF ITS OUTPUTS

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

SUMMARY OF NDT DATA ON SUB (30. IN. PLATE)
FOR STATISTICAL CORRELATION OF E AND DSM

TEST NO.	LOCATION STA OFFSET	DATE/ CALIB	TEMP DEGF	H(1) HZ	SUMZ E-6 IN/LB	DSM(1) KIP/IN	DSM(1) /E IN	DSM(W) KIP/IN	DSM(W) /E IN	E-VALUE
113-0	N001.0 R80	15/1	52.0	9.00	2.5499	478.	36.59	720.	55.08	13072.
114-0	R025.0 R80	14/3		7.98	3.1564	355.	33.62	660.	62.50	10561.
115-0	R025.0 L80	15/1		7.99	3.2469	354.	34.47	600.	58.44	10266.
116-0	N035.5 R80	14/3		6.00	2.9130	470.	41.06	680.	59.43	11443.
117-0	P061.0 R80	14/3	53.5	5.97	3.2110	457.	44.03	620.	59.73	10381.
118-0	M015.9 CCO	14/1		6.99	2.8486	454.	38.00	580.	49.57	11702.
119-0	N020.0 R42	14/1		7.00	3.2743	391.	38.41	590.	57.95	10180.
120-0	N022.0 L42	14/1		7.00	3.0105	453.	40.87	580.	52.38	11073.
121-0	P012.5 L42	14/1		7.00	2.7615	508.	42.08	630.	52.19	12071.
122-0	R029.0 L42	14/1		7.99	2.4253	498.	36.21	770.	56.02	13744.
123-0	R029.0 R42	14/1		7.99	2.6891	506.	40.81	630.	50.82	12396.
124-0	M037.0 L42	14/1		8.00	2.4778	488.	36.24	710.	52.78	13453.
125-0	M038.0 R42	14/1		7.00	3.1771	360.	34.34	610.	58.14	10492.
	MINIMUM VALUE:					354.	33.62	580.	49.57	10180.
	MAXIMUM VALUE:					508.	44.03	770.	62.50	13744.
	MEAN VALUE:					444.	38.27	645.	55.77	11602.
	COEF. OF VARIANCE:					0.131	0.087	0.093	0.071	0.108
	SUMMATION:					0.577E 04		0.838E 04		0.151E 06
	SUM OF SQUARE:					0.260E 07		0.544E 07		0.177E 10
	SUM OF (EVALUE X):					0.676E 08		0.979E 08		
	NUMBER OF TESTS:					13				

LINEAR CORRELATION: E-VALUE = 16.76 X DSM(1) + 4162.
CORRELATION COEFFICIENT: 0.78

LINEAR CORRELATION: E-VALUE = 16.24 X DSM(W) + 1134.
CORRELATION COEFFICIENT: 0.77

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

SUMMARY OF NDT DATA ON PAV (18. IN. PLATE)
FOR STATISTICAL CORRELATION OF E AND DSM

TEST NO.	LOCATION STA OFFSET	DATE/ CALIB	TEMP DEGF	H(1) HZ	SUMZ E-6 IN/LB	DSM(1) KIP/IN	DSM(1) /E IN	DSM(W) KIP/IN	DSM(W) /E IN	E-VALUE
1-0	A000.5 R12	15/1	50.7	10.01	0.3094	2817.	15.69	6080.	33.86	179537.
2-0	A002.5 L12	15/1		10.00	0.3094	2806.	15.63	6080.	33.86	179554.
3-0	A004.5 R12	15/1		8.98	1.3634	695.	17.05	1600.	39.27	40747.
4-0	A006.5 L12	15/1		8.98	1.2325	687.	15.25	1760.	39.04	45077.
5-0	A008.5 R12	15/1		7.99	1.5585	610.	17.11	1360.	38.15	35647.
6-0	A010.5 L12	15/1		7.98	1.5198	608.	16.65	1280.	35.02	36555.
7-0	A012.5 R12	15/1		8.01	1.5004	633.	17.09	1280.	34.57	37028.
8-0	A015.0 L12	15/2		7.99	1.5270	624.	17.15	1320.	36.28	36383.
9-0	A017.5 R12	15/2		8.00	1.6016	599.	17.25	1200.	34.59	34688.
10-0	A020.0 L12	15/2		9.02	1.3643	607.	14.90	1440.	35.36	40722.
11-0	A023.0 R12	15/2	44.4	9.00	1.3628	606.	14.87	1610.	39.25	40766.
12-0	A026.0 L12	15/2		9.00	1.5333	568.	15.68	1490.	38.64	36232.
13-0	A029.0 R12	15/2		9.00	1.4591	587.	15.43	1520.	39.92	38075.
14-0	A032.0 L12	15/2		9.01	1.2864	659.	15.25	1760.	40.75	43188.
15-0	A035.0 R12	15/2		9.00	1.4227	624.	15.98	1200.	30.73	39049.
16-0	A037.5 L12	15/2		8.99	1.3999	618.	15.56	1200.	30.24	39686.
17-0	A040.0 R12	15/2		8.99	1.3760	635.	15.73	1560.	38.64	40375.
18-0	A042.5 L12	15/2		9.02	1.3814	645.	16.05	1440.	35.81	40217.
19-0	A045.5 R12	15/2	46.4	9.00	1.3675	632.	15.56	1440.	35.45	40625.
20-0	A048.5 L12	16/1		8.00	1.7100	512.	15.75	1360.	41.86	32489.
21-0	A051.5 R12	16/1		7.98	1.5080	619.	16.81	1480.	40.17	36839.
22-0	A054.5 L12	16/1		8.01	1.3523	691.	16.82	1440.	35.05	41083.
23-0	A057.5 R12	16/1		7.98	1.9025	456.	15.62	1200.	41.09	29202.
24-0	A060.5 L12	16/1		8.00	1.2791	754.	17.36	1520.	35.00	43432.
25-0	A063.5 R12	16/1		8.00	1.4394	645.	16.71	1440.	37.31	38597.
26-0	A065.5 L12	16/1		8.00	1.4627	616.	16.21	1520.	40.02	37982.
27-0	A067.5 R12	16/1		8.00	1.6085	547.	15.84	1360.	39.38	34538.
28-0	A069.5 L12	16/1		7.99	1.7093	515.	15.85	1280.	39.38	32501.
29-0	A071.5 R12	16/1		7.98	1.9295	456.	15.84	1200.	41.68	28792.
30-0	A073.5 L12	16/1		8.00	1.8785	464.	15.69	1160.	39.22	29575.
31-0	A075.5 R12	16/1		8.00	2.0217	465.	16.92	1000.	36.39	27480.
32-0	A077.5 L12	16/1	54.6	10.01	0.3239	2702.	15.75	5440.	31.71	171542.
33-0	A079.5 R12	15/4		10.00	0.3355	2608.	15.75	5840.	35.27	165589.
34-0	B016.5 L12	13/2		7.98	1.7142	565.	17.43	960.	29.62	32409.
35-0	B022.5 R12	13/2		7.99	1.5245	730.	20.05	1200.	32.93	36442.
36-0	B025.5 L12	13/2		7.99	1.7184	644.	19.93	1040.	32.17	32331.
37-0	B028.5 R12	13/2		7.98	1.4890	769.	20.61	1200.	32.16	37310.
38-0	B031.5 L12	13/2		7.98	1.6361	671.	19.78	1120.	32.98	33955.
39-0	B034.5 R12	13/2		8.01	1.7193	660.	20.44	1040.	32.18	32313.
40-0	B037.5 L12	13/2		7.98	1.6466	686.	20.32	1080.	32.01	33740.
41-0	B040.5 R12	13/2	59.7	7.99	1.7678	623.	19.84	1040.	33.09	31427.
42-0	B044.0 L12	13/2		7.98	1.6156	674.	19.59	1120.	32.57	34387.
43-0	B047.5 R12	13/2		9.01	1.4847	730.	19.51	1160.	31.00	37420.

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SUMMARY OF NDT DATA ON PAV (18. IN. PLATE)
FOR STATISTICAL CORRELATION OF E AND DSM

TEST NO.	LOCATION STA	OFFSET	DATE/ CALIB	TEMP DEGF	H(1) HZ	SUMZ E-6 IN/LB	DSM(1) KIP/IN	DSM(1) /E IN	DSM(W) KIP/IN	DSM(W) /E IN	E-VALUE
44-0	B051.0	L12	13/2		8.98	1.4750	720.	19.12	1200.	31.86	37665.
45-0	C017.0	R10	15/2		8.00	2.2169	405.	16.18	840.	33.52	25060.
46-0	C020.0	L10	12/1		7.98	1.3197	718.	17.05	1600.	38.01	42098.
47-0	C023.0	R10	12/2	61.0	7.98	1.9281	488.	16.04	1360.	44.75	30390.
48-0	C026.0	L10	12/2		7.99	1.5816	576.	16.39	1520.	43.27	35126.
49-0	C029.0	R10	12/2		9.00	1.0440	943.	17.71	1600.	30.07	53213.
50-0	C032.0	L10	12/2		8.99	1.0940	870.	16.98	1640.	32.00	51248.
51-0	C035.0	R10	12/2		7.99	1.2321	868.	19.25	1360.	30.16	45091.
52-0	C038.0	L10	12/2		9.00	1.1398	801.	16.43	1640.	33.65	48739.
53-0	C041.0	R10	12/2		9.00	1.2584	793.	17.96	1400.	31.71	44149.
54-0	C044.0	L10	12/2		7.98	1.8345	572.	18.89	1020.	33.68	30284.
55-0	C047.0	R10	12/2	67.5	8.00	1.5758	671.	19.04	1160.	32.90	35256.
56-0	C050.0	L10	12/2		8.00	2.2606	467.	18.99	880.	35.81	24576.
57-0	D027.5	S50	12/1		6.99	2.9279	392.	20.64	540.	28.46	18975.
58-0	D030.5	S50	13/2	60.3	8.00	1.6146	690.	20.06	1120.	32.55	34409.
59-0	D033.5	S50	12/2		8.00	1.7206	598.	18.54	1120.	34.69	32289.
60-0	E032.5	N00	12/2		7.99	2.1595	449.	17.44	960.	37.32	25727.
61-0	E044.0	N00	12/2		8.01	1.3622	780.	19.13	1440.	35.31	40782.
62-0	E050.0	N00	12/2		6.99	2.3792	478.	20.48	780.	33.40	23350.
63-0	F001.0	L10	16/2	52.5	8.00	1.7454	644.	20.24	1020.	32.04	31830.
64-0	F004.5	R10	13/2		7.98	1.6261	659.	19.30	1120.	32.78	34164.
65-0	F008.0	L10	13/2		7.98	1.5983	720.	20.71	1120.	32.22	34759.
66-0	G003.0	R12	12/2		8.00	1.6741	587.	17.70	1160.	34.96	33185.
67-0	G006.0	L12	12/2		7.99	1.4899	720.	19.30	1280.	34.33	37288.
68-0	G009.0	R12	12/2		7.99	1.4809	724.	19.30	1220.	32.52	37514.
69-0	G012.0	L12	12/2	65.4	7.99	1.3870	793.	19.81	1260.	31.46	40055.
70-0	G015.0	R12	12/2		9.01	1.3470	760.	18.43	1380.	33.46	41245.
71-0	G018.0	L12	12/2		8.00	1.5323	693.	19.12	1200.	33.10	36255.
72-0	G021.0	R12	15/4	55.9	7.99	1.6352	703.	20.70	1040.	30.61	33974.
73-0	H007.5	U50	12/2		9.00	0.8288	1208.	18.02	1920.	28.64	67034.
74-0	H010.5	U50	12/2		8.99	0.8242	1188.	17.62	1920.	28.49	67402.
75-0	H013.5	U50	12/2		8.98	1.1213	857.	17.29	1700.	34.31	49545.
76-0	I000.5	R10	13/1		8.99	1.1145	868.	17.42	1680.	33.70	49847.
77-0	I003.5	L10	13/1	57.0	8.99	1.1204	851.	17.17	1560.	31.46	49584.
78-0	I006.5	R10	13/1		9.00	1.1398	842.	17.28	1600.	32.83	48742.
79-0	I009.5	L10	13/1		9.00	1.0551	913.	17.34	1600.	30.39	52652.
80-0	I012.5	R10	13/1		8.99	1.3092	729.	17.18	1400.	32.99	42434.
81-0	I015.5	L10	13/1		9.00	1.1990	781.	16.86	1520.	32.80	46335.
82-0	I018.5	R10	13/1		8.99	1.3497	743.	18.04	1360.	33.04	41160.
83-0	I021.5	L10	13/1	58.7	8.98	1.4077	689.	17.47	1200.	30.41	39465.
84-0	I024.5	R10	15/4		10.00	0.4770	1919.	16.48	3440.	29.54	116463.
85-0	I024.5	T00	15/4		9.00	1.0402	1019.	19.07	1920.	35.95	53406.
86-0	J002.0	L10	16/3	58.8	8.01	2.1063	518.	19.65	880.	33.36	26376.

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

SUMMARY OF NDT DATA ON PAV (18. IN. PLATE)
FOR STATISTICAL CORRELATION OF E AND DSM

TEST NO.	LOCATION STA OFFSET	DATE/ CALIB	TEMP DEGF	H(1) HZ	SUMZ E-6 IN/LB	DSM(1) KIP/IN	DSM(1) /E IN	DSM(W) KIP/IN	DSM(W) /E IN	E-VALUE
87-0	J005.0 R10	16/3		8.00	1.7926	642.	20.71	960.	30.98	30992.
88-0	K002.0 L10	15/1		4.99	1.4050	946.	23.93	1560.	39.45	39542.
89-0	K004.0 R10	16/3	62.2	9.00	1.4882	715.	19.16	1160.	31.07	37330.
90-0	K006.5 L10	16/3		8.97	1.1043	969.	19.26	1600.	31.80	50309.
91-0	K009.0 R10	16/3		9.99	0.8430	1216.	18.45	1960.	29.74	65899.
92-0	K012.0 L10	16/3		8.99	0.9458	1107.	18.84	1800.	30.64	58742.
93-0	K015.0 R10	16/3		9.00	1.1856	848.	18.10	1520.	32.44	46858.
94-0	K018.0 L10	16/3		8.99	1.4124	698.	17.74	1320.	33.56	39335.
95-0	K021.0 R10	16/3		9.00	1.1283	921.	18.70	1520.	30.87	49237.
96-0	K024.0 L10	16/3		9.98	0.8559	1166.	18.00	2000.	30.81	64911.
97-0	K027.0 R10	16/3		9.00	1.1328	970.	19.78	1520.	30.99	49045.
98-0	K030.0 L10	16/3		8.98	1.0433	1028.	19.31	1720.	32.30	53248.
99-0	K033.0 R10	16/3	59.8	8.98	1.4498	682.	17.80	1200.	31.32	38319.
100-0	K036.0 L10	16/3		8.99	1.4414	709.	18.40	1160.	30.10	38543.
101-0	K039.0 R10	16/3		8.00	1.5968	689.	19.82	1120.	32.19	34792.
102-0	K042.0 L10	16/3		7.99	1.5202	743.	20.33	1080.	29.55	36544.
103-0	K045.0 R10	16/3		8.00	1.5557	721.	20.18	1080.	30.24	35710.
104-0	K048.0 L10	16/3		9.00	1.3651	713.	17.52	1280.	31.45	40698.
105-0	L051.0 C00	13/2		7.99	1.6638	667.	19.97	1160.	34.74	33391.
106-0	L053.5 C00	13/2		8.00	1.6900	662.	20.13	1120.	34.07	32874.
107-0	L056.0 C00	13/1		7.99	2.0024	519.	18.72	960.	34.60	27745.
108-0	L049.0 N00	13/2		7.99	2.3665	444.	18.89	770.	32.80	23476.
109-0	L051.0 N00	13/2		7.99	2.3443	457.	19.29	780.	32.91	23698.
110-0	L053.5 N00	13/2		8.00	2.2244	476.	19.06	810.	32.43	24975.
111-0	L060.0 N00	13/1		8.00	1.8388	575.	19.02	1020.	33.76	30213.
112-0	L062.0 N00	13/1		8.01	1.7654	610.	19.37	1020.	32.41	31469.
				MINIMUM VALUE:		392.	14.87	540.	28.46	18975.
				MAXIMUM VALUE:		2817.	23.93	6080.	44.75	179554.
				MEAN VALUE:		780.	18.01	1488.	34.01	44130.
				COEF. OF VARIANCE:		0.551	0.097	0.615	0.101	0.629
				SUMMATION:		0.874E 05		0.167E 06		0.494E 07
				SUM OF SQUARE:		0.886E 08		0.341E 09		0.304E 12
				SUM OF (EVALUE X):		0.516E 10		0.101E 11		
				NUMBER OF TESTS:		112				

LINEAR CORRELATION: E-VALUE = 63.84 X DSM(1) - 5667.
CORRELATION COEFFICIENT: 0.99

LINEAR CORRELATION: E-VALUE = 29.93 X DSM(W) - 393.
CORRELATION COEFFICIENT: 0.99

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

SUMMARY OF NDT DATA, SORTED BY TEST NUMBER

TEST NO.	LOCATION STA OFFSET	DATE/ CALIB	TEMP DEGF	H(1) HZ	SUMZ E-6 IN/LB	DSM(1) KIP/IN	DSM(1) /E IN	DSM(W) KIP/IN	DSM(W) /E IN	E-VALUE
1-0	A000.5 R12	15/1	50.7	10.01	0.3094	2817.	15.69	6080.	33.86	179537.
2-0	A002.5 L12	15/1		10.00	0.3094	2806.	15.63	6080.	33.86	179554.
3-0	A004.5 R12	15/1		8.98	1.3634	695.	17.05	1600.	39.27	40747.
4-0	A006.5 L12	15/1		8.98	1.2325	687.	15.25	1760.	39.04	45077.
5-0	A008.5 R12	15/1		7.99	1.5585	610.	17.11	1360.	38.15	35647.
6-0	A010.5 L12	15/1		7.98	1.5198	608.	16.65	1280.	35.02	36555.
7-0	A012.5 R12	15/1		8.01	1.5004	633.	17.09	1280.	34.57	37028.
8-0	A015.0 L12	15/2		7.99	1.5270	624.	17.15	1320.	36.28	36383.
8-1	A015.0 L06	15/2		8.00	1.6250	570.	16.67	1240.	36.27	34187.
8-2	A015.0 L18	15/2		8.00	1.5860	583.	16.64	1280.	36.54	35028.
8-3	A015.0 L30	15/1		8.00	1.7794	506.	16.21	1200.	38.44	31221.
8-4	A015.0 L50	15/1		7.98	1.5648	602.	16.96	1320.	37.18	35503.
8-5	A015.0 L70	15/1	47.8	8.01	2.2744	385.	15.77	1040.	42.58	24427.
8-6	A015.0 L80	15/1		7.98	3.2565	363.	35.48	580.	56.66	10236.
9-0	A017.5 R12	15/2		8.00	1.6016	599.	17.25	1200.	34.59	34688.
10-0	A020.0 L12	15/2		9.02	1.3643	607.	14.90	1440.	35.36	40722.
11-0	A023.0 R12	15/2	44.4	9.00	1.3628	606.	14.87	1600.	39.25	40766.
12-0	A026.0 L12	15/2		9.00	1.5333	568.	15.68	1400.	38.64	36232.
13-0	A029.0 R12	15/2		9.00	1.4591	597.	15.43	1520.	39.92	38075.
14-0	A032.0 L12	15/2		9.01	1.2864	659.	15.25	1760.	40.75	43188.
15-0	A035.0 R12	15/2		9.00	1.4227	624.	15.98	1200.	30.73	39049.
16-0	A037.5 L12	15/2		8.99	1.3999	618.	15.56	1200.	30.24	39686.
17-0	A040.0 R12	15/2		8.99	1.3760	635.	15.73	1560.	38.64	40375.
18-0	A042.5 L12	15/2		9.02	1.3814	645.	16.05	1440.	35.81	40217.
19-0	A045.5 R12	15/2	46.4	9.00	1.3675	632.	15.56	1440.	35.45	40625.
20-0	A048.5 L12	16/1		8.00	1.7100	512.	15.75	1360.	41.86	32489.
21-0	A051.5 R12	16/1		7.98	1.5080	619.	16.81	1480.	40.17	36839.
22-0	A054.5 L12	16/1		8.01	1.3523	691.	16.82	1440.	35.05	41083.
23-0	A057.5 R12	16/1		7.98	1.9025	456.	15.62	1200.	41.09	29202.
24-0	A060.5 L12	16/1		8.00	1.2791	754.	17.36	1520.	35.00	43432.
25-0	A063.5 R12	16/1		8.00	1.4394	645.	16.71	1440.	37.31	38597.
25-1	A063.5 R06	16/1	53.4	7.98	1.7189	509.	15.76	1280.	39.60	32321.
25-2	A063.5 R18	16/1		7.98	1.5480	593.	16.51	1360.	37.89	35889.
25-3	A063.5 R30	16/1		8.01	1.4247	665.	17.05	1520.	38.98	38996.
25-4	A063.5 R50	16/1		8.00	1.4323	649.	16.74	1440.	37.13	38787.
25-5	A063.5 R70	16/1		7.99	1.6466	545.	16.15	1440.	42.68	33740.
25-6	A063.5 R80	14/3		7.97	2.8683	411.	35.40	640.	55.07	11621.
26-0	A065.5 L12	16/1		8.00	1.4627	616.	16.21	1520.	40.02	37982.
27-0	A067.5 R12	16/1		8.00	1.6085	547.	15.84	1360.	39.38	34538.
28-0	A069.5 L12	16/1		7.99	1.7093	515.	15.85	1280.	39.38	32501.
29-0	A071.5 R12	16/1		7.98	1.9295	456.	15.84	1200.	41.68	28792.
30-0	A073.5 L12	16/1		8.00	1.8785	464.	15.69	1160.	39.22	29575.
31-0	A075.5 R12	16/1		8.00	2.0217	465.	16.92	1080.	36.39	27480.
32-0	A077.5 L12	16/1	54.6	10.01	0.3239	2702.	15.75	5440.	31.71	171542.

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

SUMMARY OF NDT DATA, SORTED BY LOCATION

TEST NO.	LOCATION STA OFFSET	DATE/ CALIB	TEMP DEGF	H(1) HZ	SUMZ E-6 IN/LB	DSM(1) KIP/IN	DSM(1) /E IN	DSM(W) KIP/IN	DSM(W) /E IN	E-VALUE
1-0	A000.5 R12	15/1	50.7	10.01	0.3094	2817.	15.69	6080.	33.86	179537.
2-0	A002.5 L12	15/1		10.00	0.3094	2806.	15.63	6080.	33.86	179554.
3-0	A004.5 R12	15/1		8.98	1.3634	695.	17.05	1600.	39.27	40747.
4-0	A006.5 L12	15/1		8.98	1.2325	687.	15.25	1760.	39.04	45077.
5-0	A008.5 R12	15/1		7.99	1.5585	610.	17.11	1360.	38.15	35647.
6-0	A010.5 L12	15/1		7.98	1.5198	608.	16.65	1280.	35.02	36555.
7-0	A012.5 R12	15/1		8.01	1.5004	633.	17.09	1280.	34.57	37028.
8-1	A015.0 L06	15/2		9.00	1.6250	570.	16.67	1240.	36.27	34187.
8-0	A015.0 L12	15/2		7.99	1.5270	624.	17.15	1320.	36.28	36383.
8-2	A015.0 L18	15/2		8.00	1.5860	583.	16.64	1280.	36.54	35028.
8-3	A015.0 L30	15/1		8.00	1.7794	506.	16.21	1200.	38.44	31221.
8-4	A015.0 L50	15/1		7.98	1.5648	602.	16.96	1320.	37.18	35503.
8-5	A015.0 L70	15/1	47.8	8.01	2.2744	385.	15.77	1040.	42.58	24427.
8-6	A015.0 L80	15/1		7.98	3.2565	363.	35.46	580.	56.66	10236.
9-0	A017.5 R12	15/2		8.00	1.6016	599.	17.25	1200.	34.59	34688.
10-0	A020.0 L12	15/2		9.02	1.3643	607.	14.90	1440.	35.36	40722.
11-0	A023.0 R12	15/2	44.4	9.00	1.3628	606.	14.87	1600.	39.25	40766.
12-0	A026.0 L12	15/2		9.00	1.5333	568.	15.68	1400.	38.64	36232.
13-0	A029.0 R12	15/2		9.00	1.4591	587.	15.43	1520.	39.92	38075.
14-0	A032.0 L12	15/2		9.01	1.2864	659.	15.25	1760.	40.75	43188.
15-0	A035.0 R12	15/2		9.00	1.4227	624.	15.98	1200.	30.73	39049.
16-0	A037.5 L12	15/2		8.99	1.3999	618.	15.56	1200.	30.24	39686.
17-0	A040.0 R12	15/2		8.99	1.3760	635.	15.73	1560.	38.64	40375.
18-0	A042.5 L12	15/2		9.02	1.3814	645.	16.05	1440.	35.81	40217.
19-0	A045.5 R12	15/2	46.4	9.00	1.3675	632.	15.56	1440.	35.45	40625.
20-0	A048.5 L12	16/1		8.00	1.7100	512.	15.75	1360.	41.86	32489.
21-0	A051.5 R12	16/1		7.98	1.5080	619.	16.81	1490.	40.17	36839.
22-0	A054.5 L12	16/1		8.01	1.3523	691.	16.82	1440.	35.05	41083.
23-0	A057.5 R12	16/1		7.98	1.9025	456.	15.62	1200.	41.09	29202.
24-0	A060.5 L12	16/1		8.00	1.2791	754.	17.36	1520.	35.00	43432.
25-1	A063.5 R06	16/1	53.4	7.98	1.7189	509.	15.76	1280.	39.60	32321.
25-0	A063.5 R12	16/1		8.00	1.4394	645.	16.71	1440.	37.31	38597.
25-2	A063.5 R18	16/1		7.98	1.5480	593.	16.51	1360.	37.89	35889.
25-3	A063.5 R30	16/1		8.01	1.4247	665.	17.05	1520.	38.98	38996.
25-4	A063.5 R50	16/1		8.00	1.4323	649.	16.74	1440.	37.13	38787.
25-5	A063.5 R70	16/1		7.99	1.6466	545.	16.15	1440.	42.68	33740.
25-6	A063.5 R80	14/3		7.97	2.8683	411.	35.40	640.	55.07	11621.
26-0	A065.5 L12	16/1		8.00	1.4627	616.	16.21	1520.	40.02	37982.
27-0	A067.5 R12	16/1		8.00	1.6085	547.	15.84	1360.	39.38	34538.
28-0	A069.5 L12	16/1		7.99	1.7093	515.	15.85	1280.	39.38	32501.
29-0	A071.5 R12	16/1		7.98	1.9295	456.	15.84	1200.	41.68	28792.
30-0	A073.5 L12	16/1		8.00	1.8785	464.	15.69	1160.	39.22	29575.
31-0	A075.5 R12	16/1		8.00	2.0217	465.	16.92	1000.	36.39	27480.
32-0	A077.5 L12	16/1	54.6	10.01	0.3239	2702.	15.75	5440.	31.71	171542.

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

SUMMARY OF NDT DATA, SORTED BY DATE/CALIB

TEST NO.	LOCATION STA OFFSET	DATE/ CALIB	TEMP DEGF	H(1) HZ	SUMZ E-6 IN/LB	DSM(1) KIP/IN	DSM(1) /E IN	DSM(W) KIP/IN	DSM(W) /E IN	E-VALUE
46-0	C020.0 L10	12/1		7.98	1.2197	718.	17.05	1600.	38.01	42098.
46-1	C020.0 L10	12/1		8.99	1.2227	687.	15.12	1600.	35.21	45438.
46-2	C020.0 L10	12/1		8.00	1.3001	702.	16.42	1600.	37.44	42733.
46-3	C020.0 L10	12/1		7.98	1.3197	718.	17.05	1600.	38.01	42098.
46-4	C020.0 L10	12/1		7.98	1.3080	774.	18.25	1600.	37.67	42475.
57-0	D027.5 S50	12/1		6.90	2.9279	392.	20.64	540.	28.46	18975.
57-1	D027.5 S50	12/1		6.90	2.9279	392.	20.64	540.	28.46	18975.
57-2	D027.5 S50	12/1		6.90	3.4002	294.	18.02	540.	33.05	16339.
57-3	D027.5 S50	12/1	57.4	6.90	3.5272	293.	18.60	540.	34.28	15751.
57-4	D027.5 S50	12/1		9.90	2.2624	539.	21.93	540.	21.99	24556.
47-0	C023.0 R10	12/2	61.0	7.98	1.8281	488.	16.04	1360.	44.75	30390.
48-0	C026.0 L10	12/2		7.99	1.5816	576.	16.39	1520.	43.27	35126.
49-0	C029.0 R10	12/2		9.00	1.0440	943.	17.71	1600.	30.07	53213.
50-0	C032.0 L10	12/2		8.99	1.0940	870.	16.98	1640.	32.00	51248.
51-0	C035.0 R10	12/2		7.99	1.2221	868.	19.25	1360.	30.16	45091.
52-0	C038.0 L10	12/2		9.00	1.1398	801.	16.43	1640.	33.65	48739.
53-0	C041.0 R10	12/2		9.00	1.2584	793.	17.96	1400.	31.71	44149.
54-0	C044.0 L10	12/2		7.98	1.8345	572.	18.89	1020.	33.68	30284.
55-0	C047.0 R10	12/2	67.5	8.00	1.5758	671.	19.04	1160.	32.90	35256.
56-0	C050.0 L10	12/2		8.00	2.2606	467.	18.99	880.	35.81	24576.
59-0	D033.5 S50	12/2		8.00	1.7206	598.	18.54	1120.	34.69	32289.
60-0	E032.5 N00	12/2		7.99	2.1595	449.	17.44	960.	37.32	25727.
61-0	E044.0 N00	12/2		8.01	1.3622	780.	19.13	1440.	35.31	40782.
62-0	E050.0 N00	12/2		6.99	2.3792	478.	20.48	780.	33.40	23350.
66-0	G003.0 R12	12/2		8.00	1.6741	587.	17.76	1160.	34.96	33185.
67-0	G006.0 L12	12/2		7.99	1.4899	720.	19.30	1280.	34.33	37288.
68-0	G009.0 R12	12/2		7.99	1.4899	724.	19.30	1220.	32.52	37514.
69-0	G012.0 L12	12/2	65.4	7.99	1.3870	793.	19.81	1260.	31.46	40055.
70-0	G015.0 R12	12/2		9.01	1.3470	760.	18.43	1380.	33.46	41245.
71-0	G018.0 L12	12/2		8.00	1.5323	693.	19.12	1200.	33.10	36255.
72-0	H007.5 U50	12/2		9.00	0.8288	1208.	18.02	1920.	28.64	67034.
74-0	H010.5 U50	12/2		8.99	0.8242	1188.	17.62	1920.	28.49	67402.
75-0	H013.5 U50	12/2		8.98	1.1213	857.	17.29	1700.	34.31	49545.
76-0	I000.5 R10	13/1		8.99	1.1145	868.	17.42	1680.	33.70	49847.
77-0	I003.5 L10	13/1	57.6	8.99	1.1204	851.	17.17	1560.	31.46	49584.
78-0	I006.5 R10	13/1		9.00	1.1398	842.	17.28	1600.	32.83	48742.
79-0	I009.5 L10	13/1		9.00	1.0951	913.	17.34	1600.	30.39	52652.
80-0	I012.5 R10	13/1		8.99	1.3092	729.	17.18	1400.	32.99	42434.
81-0	I015.5 L10	13/1		9.00	1.1990	781.	16.86	1520.	32.80	46335.
82-0	I018.5 R10	13/1		8.99	1.3497	743.	18.04	1360.	33.04	41160.
83-0	I021.5 L10	13/1	59.7	8.98	1.4077	689.	17.47	1200.	30.41	39465.
107-0	L056.0 C00	13/1		7.99	2.0024	519.	18.72	960.	34.60	27745.
111-0	L060.0 N00	13/1		8.00	1.8588	575.	19.02	1020.	33.76	30213.
112-0	L062.0 N00	13/1		8.01	1.7654	610.	19.37	1020.	32.41	31469.

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

CALIBRATION FACTORS

DATE	TIME CODE	RESPONSE E-6	AMPLITUDE E-1	FREQUENCY E-3
9/12/77	12/0930/1	0.99900	0.99620	1.00000
9/12/77	12/1330/2	0.99960	0.99700	1.00000
9/12/77	12/1825/3	0.99810	0.99840	1.00000
9/13/77	13/0900/1	0.99810	0.99500	1.00000
9/13/77	13/1435/2	0.99950	0.99790	1.00000
9/13/77	13/1855/3	0.99950	0.99860	1.00000
9/14/77	14/0904/1	0.99960	0.99690	1.00000
9/14/77	14/1130/2	0.99800	0.99590	1.00000
9/14/77	14/2238/3	0.99920	0.99730	1.00000
9/15/77	15/2238/1	0.99920	0.99730	1.00000
9/15/77	15/0325/2	0.99680	0.99780	1.00000
9/15/77	15/0657/3	0.99990	0.99690	1.00000
9/15/77	15/2239/4	1.00000	0.99800	1.00000
9/16/77	16/2239/1	1.00000	0.99800	1.00000
9/16/77	16/0300/2	0.99960	0.99690	1.00000
9/16/77	16/1410/3	0.99900	0.99560	1.00000
9/16/77	16/1734/4	0.99950	0.99770	1.00000

GRID IDENTIFICATIONS

A	RW 15-33
B	RW 1-19
C	TW A
D	GATE/APRN
E	XTWS TO A
F	TW B
G	TW C
H	APRON GA
I	TW D
J	TW E
K	TW F
L	APRN VANG
M	RW1-19 EXT
N	TW NEW
P	XTW-GA NU
R	TW - RW19

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

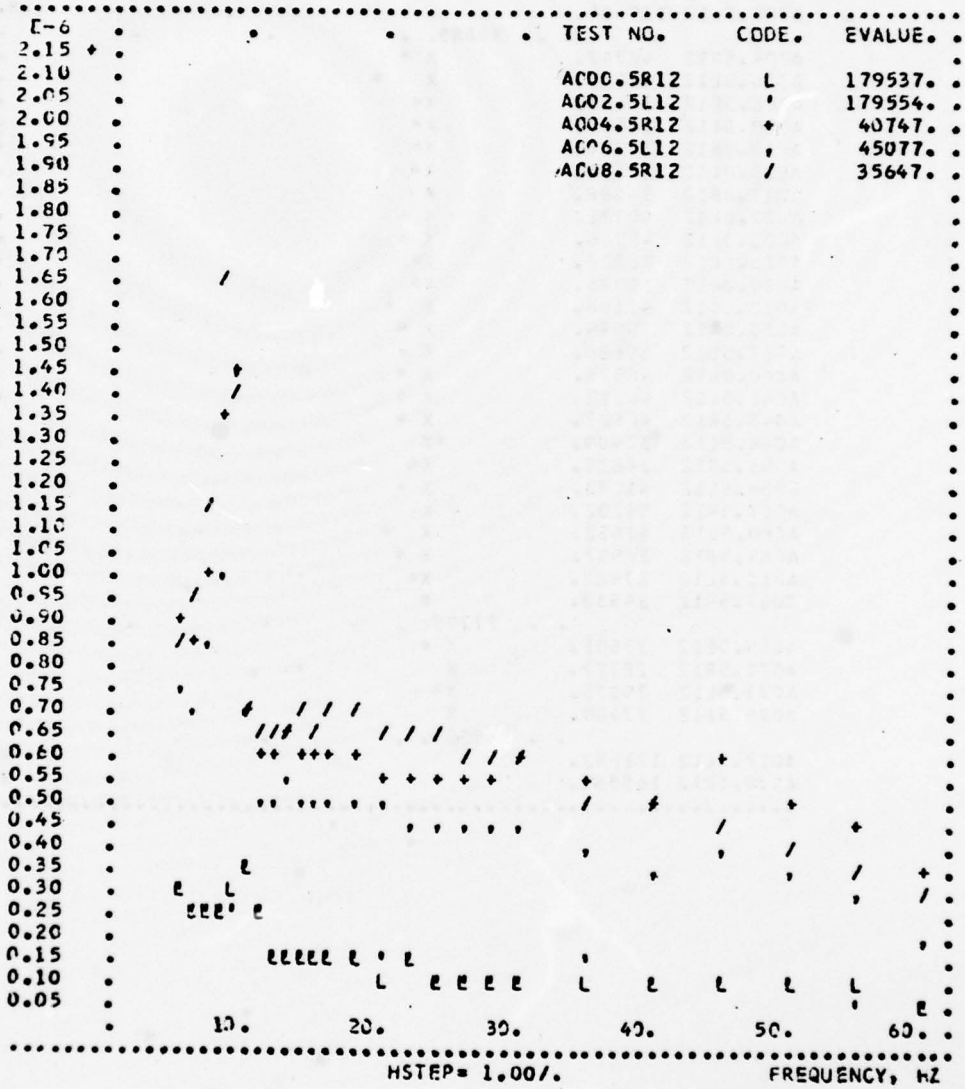
TEST IDENTIFICATIONS

TEST NO.	LOCATION STA	OFFSET	TIME CODE	TEMP DEGF	DSM(W) E+3	LOAD/RAD.	PFLPAV	DRAINAGE
1-0	A000.5	R12	15/0057/1	50.7	6080.	3.0/ 9.0	13/CC7	NORM
2-0	A002.5	L12	15/0129/1		6080.	3.0/ 9.0	13/CC7	NORM
3-0	A004.5	R12	15/0142/1		1600.	3.0/ 9.0	2/AC2	NORM
4-0	A006.5	L12	15/0154/1		1760.	3.0/ 9.0	2/AC2	NORM
5-0	A008.5	R12	15/0212/1		1360.	3.0/ 9.0	2/AC2	NORM
6-0	A010.5	L12	15/0233/1		1280.	3.0/ 9.0	2/AC2	NORM
7-0	A012.5	R12	15/0245/1		1280.	3.0/ 9.0	2/AC2	NORM
8-0	A015.0	L12	15/0350/2		1320.	3.0/ 9.0	2/AC2	NORM
8-1	A015.0	L06	15/0400/2		1240.	3.0/ 9.0	2/AC2	NORM
8-2	A015.0	L18	15/0340/2		1280.	3.0/ 9.0	2/AC2	NORM
8-3	A015.0	L30	15/0317/1		1200.	3.0/ 9.0	2/AC2	NORM
8-4	A015.0	L50	15/0306/1		1320.	3.0/ 9.0	2/AC2	NORM
8-5	A015.0	L70	15/0257/1	47.8	1040.	3.0/ 9.0	2/AC2	NORM
8-6	A015.0	L90	15/0019/1		580.	1.5/15.0	0/SUB	NORM
9-0	A017.5	R12	15/0434/2		1200.	3.0/ 9.0	2/AC2	NORM
10-0	A020.0	L12	15/0444/2		1440.	3.0/ 9.0	2/AC2	NORM
11-0	A022.5	R12	15/0422/2	44.4	1600.	3.0/ 9.0	2/AC2	NORM
12-0	A025.0	L12	15/0507/2		1400.	3.0/ 9.0	2/AC2	NORM
13-0	A027.5	R12	15/0520/2		1520.	3.0/ 9.0	2/AC2	NORM
14-0	A032.5	L12	15/0535/2		1760.	3.0/ 9.0	2/AC2	NORM
15-0	A035.0	R12	15/0606/2		1200.	3.0/ 9.0	2/AC2	NORM
16-0	A037.5	L12	15/0620/2		1200.	3.0/ 9.0	2/AC2	NORM
17-0	A040.0	R12	15/0634/2		1560.	3.0/ 9.0	2/AC2	NORM
18-0	A042.5	L12	15/0644/2		1440.	3.0/ 9.0	2/AC2	NORM
19-0	A045.5	R12	15/0655/2	46.4	1440.	3.0/ 9.0	2/AC2	NORM
20-0	A048.5	L12	16/0252/1		1360.	3.0/ 9.0	2/AC2	NORM
21-0	A051.5	R12	16/0242/1		1480.	3.0/ 9.0	2/AC2	NORM
22-0	A054.5	L12	16/0213/1		1440.	3.0/ 9.0	2/AC2	NORM
23-0	A057.5	R12	16/0220/1		1200.	3.0/ 9.0	2/AC2	NORM
24-0	A060.5	L12	16/0211/1		1520.	3.0/ 9.0	2/AC2	NORM
25-0	A063.5	R12	16/0153/1		1440.	3.0/ 9.0	2/AC2	NORM
25-1	A063.5	R06	16/0201/1	53.4	1280.	3.0/ 9.0	2/AC2	NORM
25-2	A063.5	R18	16/0144/1		1360.	3.0/ 9.0	2/AC2	NORM
25-3	A063.5	R30	16/0136/1		1520.	3.0/ 9.0	2/AC2	NORM
25-4	A063.5	R50	16/0127/1		1440.	3.0/ 9.0	2/AC2	NORM
25-5	A063.5	R70	16/0119/1		1440.	3.0/ 9.0	2/AC2	NORM
25-6	A063.5	R90	14/2317/3		640.	1.5/15.0	0/SUB	NORM
26-0	A065.5	L12	16/0108/1		1520.	3.0/ 9.0	2/AC2	NORM
27-0	A067.5	R12	16/0059/1		1360.	3.0/ 9.0	2/AC2	NORM
28-0	A069.5	L12	16/0050/1		1280.	3.0/ 9.0	1/AC1	NORM
29-0	A071.5	R12	16/0042/1		1200.	3.0/ 9.0	1/AC1	NORM
30-0	A073.5	L12	16/0032/1		1160.	3.0/ 9.0	1/AC1	NORM
31-0	A075.5	R12	16/0024/1		1000.	3.0/ 9.0	1/AC1	NORM
32-0	A077.5	L12	16/0015/1	54.6	5440.	3.0/ 9.0	13/CC7	NORM
33-0	A079.5	R12	15/2355/4		5840.	3.0/ 9.0	13/CC7	NORM

NAI C. YANG, ENGINEERING CONSULTANT DFPLOT 1

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

Z/F,IN/LB



BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

RUNWAY 15-33/PROFILE

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LOCATION   E-VAL      AREA-E     EMIN= 4000.   ESTEP= 3000./.
.....................................................................
                  . . 179545. .         .         .          .
AC00.5R12 179537.                                            #.
AC02.5L12 179554.                                            #.
                  . .  34885. .         .         .          .
AC04.5R12  40747.          X *                               .
AC06.5L12  45077.          X   *                             .
AC08.5R12  35647.          X*                                .
AC10.5L12  36555.          X*                                .
AC12.5R12  37028.          X*                                .
AC15.0L12  36383.          X*                                .
AC17.5R12  34688.          #                                 .
AC20.0L12  40722.          X *                               .
AC23.0R12  40766.          X *                               .
AC26.0L12  36232.          X*                                .
AC29.0R12  38075.          X*                                .
AC32.0L12  43188.          X  *                              .
AC35.0R12  39049.          X *                               .
AC37.5L12  39686.          X *                               .
AC40.0R12  40375.          X *                               .
AC42.5L12  40217.          X *                               .
AC45.5R12  40625.          X *                               .
AC48.5L12  32489.         *X                                 .
AC51.5R12  36829.          X*                                .
AC54.5L12  41083.          X *                               .
AC57.5R12  29202.        * X                                 .
AC60.5L12  43432.          X  *                              .
AC63.5R12  38597.          X *                               .
AC65.5L12  37982.          X*                                .
AC67.5R12  34538.          #                                 .
                  . .  27745. .         .         .          .
AC69.5L12  32501.        X *                                 .
AC71.5R12  28792.        #                                   .
AC73.5L12  29575.        X*                                  .
AC75.5R12  27480.        #                                   .
                  . . 165589. .         .         .          .
AC77.5L12 171542.                                            #.
AC79.5R12 165589.                                            #.
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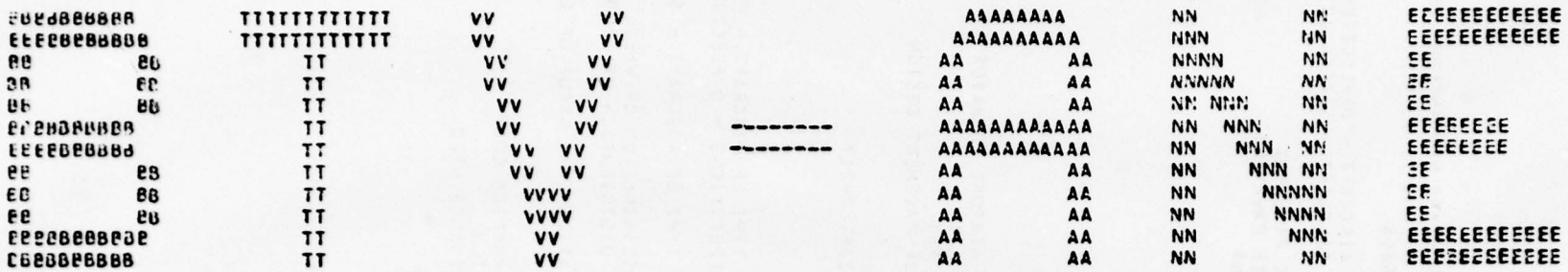

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

NONDESTRUCTIVE PAVEMENT EVALUATION

A PARTIAL FULFILLMENT OF THE FAA VALIDATION PROGRAM BY NAI C. YANG AND ASSOCIATES, ENGINEERS, P. C.

THIS IS A PROPRIETARY PROGRAM DEVELOPED BY NAI C. YANG AND ASSOCIATES, ENGINEERS, PC PRIOR TO FAA VALIDATION. THE USE OF THIS COMPUTER PROGRAM SHALL BE CONFINED TO *THOSE APPROVED BY NAI C. YANG*, AND ALSO, THE FAA UNTIL THE PROGRAM OF NONDESTRUCTIVE EVALUATION OF CIVIL AIRPORT PAVEMENTS IS OFFICIALLY ADOPTED AND IMPLEMENTED.

USER: H. TOMITA SITE: TCC CREATED AT: 20:12:26 JAN 23, 1979

THE FAA UNDER THE PRESENT CONDITION ASSUMES NO RESPONSIBILITIES NOR OBLIGATIONS FROM THE USE OF THE PROGRAM AND THE INTERPRETATION OF ITS OUTPUTS

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

DICTIONARIES

AAND	EQUIVALENT LOAD REPETITIONS OF ALL AIRCRAFT - DEFLECTION CRITERIA
AANS	EQUIVALENT LOAD REPETITIONS OF ALL AIRCRAFT - STRESS CRITERIA
AC	ASPHALT PAVEMENT
AC/AC	ASPHALT OVERLAY ON EXISTING ASPHALT PAVEMENT
AC/CC	ASPHALT OVERLAY ON EXISTING CONCRETE PAVEMENT
AC/CCA	ASPHALT OVERLAY ON CONCRETE PAVEMENT
AC/PAV	ASPHALT OVERLAY
ACC	ASPHALT PAVEMENT WITH CTB
ACE	FAA CENTRAL REGION
ACSTR	ACTUAL WORKING TENSILE STRESS
AC1	3 IN. EXAC
AC2	6 IN. EXAC
AC3	9 IN. EXAC
AC4	12 IN. EXAC
AC5	16 IN. EXAC
AC6	20 IN. EXAC
ADM	AVERAGE DAILY MOVEMENT
ADMAPO	AVERAGE DAILY MOVEMENT PREPARED BY AIRPORT OPERATOR
ADMATA	AVERAGE DAILY MOVEMENT PREPARED BY ATA
ADMFAA	AVERAGE DAILY MOVEMENT PREPARED BY FAA
ADMSUG	AVERAGE DAILY MOVEMENT SUGGESTED FOR PAVEMENT DESIGN
AEA	FAA EASTERN REGION
AEU	FAA EUROPEAN REGION
AGBS	AGGREGATE BASE COURSE, P-206 TO P-214, P-217
AGL	FAA GREAT LAKES REGION
AIRB	ANNUAL INTEREST RATE OF BOND
ALF	AIRCRAFT LOAD FACTOR
AMC	ANNUAL MAINTENANCE COST, $/S.Y.
AND	EQUIVALENT LOAD REPETITIONS OF ONE TYPE OF AIRCRAFT - DEFLECTION
ANDA	ANTICIPATED SERVICE LIFE IN LOAD REPETITIONS - DEFLECTION CRITERIA
ANE	FAA NEW ENGLAND REGION
ANS	EQUIVALENT LOAD REPETITIONS OF ONE TYPE OF AIRCRAFT - STRESS CRITERIA
ANW	FAA NORTHWEST REGION
APX	TRANSVERSE DIRECTION PROBABILITY DISTRIBUTION OF WHEEL LOAD
APY	LONGITUDINAL DIRECTION PROBABILITY DISTRIBUTION OF LANDING IMPACT
ARCD	ANNUAL RATE OF CASH DISCOUNT
AREA-E	MEAN VALUE MINUS ONE STANDARD DEVIATION OF A GROUP OF E-VALUE
ARM	FAA ROCKY MOUNTAIN REGION
ASBS	ASPHALT BASE COURSE, P-201
ASCCC	RATE OF ANNUAL ESCALATION OF CONSTRUCTION COST
ASCLT	COST OF ASPHALT CIL, CAR LOAD PER TON
ASCMC	RATE OF ANNUAL ESCALATION OF MAINTENANCE NEED
ASO	FAA SOUTHERN REGION
ASTB	ASPHALT TREATED BASE, P-215, P-216

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

DICTIONARIES

ASTOP	ASPHALT TOP COURSE, P-401, P-408
ASW	FAA SOUTHWEST REGION
ATD	AIRPORT TRAFFIC DISTRIBUTION
ATDAPO	AIRPORT TRAFFIC DISTRIBUTION PREPARED BY AIRPORT OPERATOR
ATDSUG	AIRPORT TRAFFIC DISTRIBUTION SUGGESTED FOR PAVEMENT DESIGN
ATM	AIRCRAFT TRAFFIC MOVEMENTS
AWE	FAA WESTERN REGION
A1,A2	COEFFICIENTS OF TRANSFER FUNCTION (TRANSVERSE TO LONG. DEFLECTION)
C	CENTER LINE
CALIB	THE CALIBRATION IDENTIFICATION NUMBER
CC	CONCRETE PAVEMENT
CC/AC	CONCRETE OVERLAY ON EXISTING ASPHALT PAVEMENT
CC/CC	CONCRETE OVERLAY ON EXISTING CONCRETE PAVEMENT
CC/PAV	CONCRETE OVERLAY
CCA	CONCRETE PAVEMENT WITH AGBS
CCL	ROLLED LEAN CONCRETE BASE PAVEMENT
CC1	8 IN. EXPC
CC2	10 IN. EXPC
CC3	12 IN. EXPC
CC4	14 IN. EXPC
CC5	15 IN. EXPC
CC6	16 IN. EXPC
CC7	17 IN. EXPC
CED	COMPUTED ENGINEERING DATA
CLHR	RATE OF COMMON LABOR PER HOUR
CCAGT	COST OF COARSE AGGREGATE PER TON
CCBEN	COST BENEFIT PROGRAM
CCVAR	COEFFICIENT OF VARIANCE - MATERIAL STRENGTH
CTB	CEMENT TREATED BASE, P-301, P-304
DC	COEFF. OF CONTACT RIGIDITY
DEF/DI	PAVEMENT FUNCTION GOVERNED BY SURFACE DEFLECTION AND AIRCRAFT VIBRATION
DEF/WZ	PAVEMENT FUNCITON GOVERNED BY SURFACE DEFLECTION
DI	DYNAMIC INCREMENT OF AIRCRAFT VIBRATION AT PAVEMENT-WHEEL INTERFACE
DRY	DRY BASE
DSM(W)	DYNAMIC STIFFNESS MODULUS DEFINED BY WES
DSM(1)	F(1)/Z(1) AT FIRST RESONANCE
D1,D2	COEFFICIENTS OF TRANSFER FUNCTION (ELASTIC TO CUMULATIVE DEFORMATION)
D3	COEFFICIENT D2 AT INITIAL STAGE OF TRANSVERSE DEFORMATION FOR PFL STUDY
E-SUP	E-VALUE OF PAVEMENT SUPPORT (SUBGRADE OR EXISTING PAVEMENT)
END	END PORTION OF RUNWAY AT LANDING ROLL
EPAV	E-VALUE OF EXISTING PAVEMENT
EPW	OPERATING EMPTY WEIGHT OF AIRCRAFT
ESUB	E-VALUE OF SUBGRADE
ESW	EQUIVALENT SINGLE WHEEL LOAD

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

DICTIONARIES

ESWL	EQUIVALENT SINGLE WHEEL LOAD
EVALUE	MODULUS OF ELASTICITY OF RESPONSE SYSTEM IN NDT PROGRAM
EVAL	MODULUS OF ELASTICITY OF RESPONSE SYSTEM IN NDT PROGRAM
EXACOV	EXISTING ASPHALT OVERLAY
EXAC	EXISTING ASPHALT LAYER
EXBSA	EXISTING BASE OF ASPHALT PAVEMENT
EXBSC	EXISTING BASE OF CONCRETE PAVEMENT
EXPCOV	EXISTING PORTLAND CEMENT CONCRETE OVERLAY
EXPC	EXISTING PORTLAND CEMENT CONCRETE LAYER
F(I)	FORCING FUNCTION, DOUBLE AMPLITUDE IN POUNDS
FACTOR	INFLUENCE FACTOR OF ALL AIRCRAFT WHEELS
FAM	FORECAST OF AIRCRAFT MOVEMENT
FAM*2	DOUBLE VOLUME OF FAM FOR PAVEMENT DESIGN
FAM/2	ONE HALF VOLUME OF FAM FOR PAVEMENT DESIGN
FAMAPO	FORECAST OF AIRCRAFT MOVEMENT PREPARED BY AIRPORT OPERATOR
FAMATA	FORECAST OF AIRCRAFT MOVEMENT PREPARED BY AIR TRANSPORT ASSOCIATION
FAMSUG	FORECAST OF AIRCRAFT MOVEMENT SUGGESTED FOR PAVEMENT DESIGN
FATIST	COEFFICIENT OF FATIGUE STRESS (LOG CYCLE)
FIAGT	COST OF FINE AGGREGATE PER TON
FREQ	NATURAL FREQUENCY OF AIRCRAFT GEAR SUPPORT ON PAVEMENT
GELS	GENERAL EQUILIBRIUM LAYER SYSTEM PROGRAM
H(I)	FREQUENCY OF FORCING FUNCTION IN HZ AT ITH TEST
H(1)	H(I) AT FIRST RESONANCE, HZ
HLBT	COST OF HYDRATED LIME, BULK PER TON
HP	HOLDING PAD
HSTEP	FREQUENCY SCALE OF FREQUENCY RESPONSE PLOT, Z(I)/F(I) VS H(I)
HSTRS	STRESS AT DESIGN LAYER OF PAVEMENT MODEL FROM GELS
ICC	INITIAL CONSTRUCTION COST OF TOTAL PAVEMENT, $/S.Y.
ILS	INSTRUMENT LANDING SYSTEM
INFI	SEMI-INFINITE THICKNESS OF SUPPORT LAYER OF PAVEMENT MODEL
INPUT	SUMMARY OF ALL INPUT PARAMETERS
IWFAT	COST OF INDUSTRY WASTE FINE AGGREGATE PER TON
KEEL	CENTER STRIP OF RUNWAY OR TAXIWAY
L	LEFT OF CENTER LINE
LBBM	COST OF CONSTRUCTION LUMBER PER BOARD MEASURE
LC/PAV	LCF OVERLAY
LCF	LIME-CEMENT-FLYASH PAVEMENT
LCF/AC	LCF OVERLAY ON EXISTING ASPHALT PAVEMENT
LCF/CC	LCF OVERLAY ON EXISTING CONCRETE PAVEMENT
LCFA	LCF-A MIX WITH NATURAL AGGREGATE
LCFB	LCF-B MIX WITH NATURAL AGGREGATE
LCFC	LCF-C MIX WITH NATURAL AGGREGATE
LCFSA	LCFS-A MIX WITH INDUSTRY WASTE AGGREGATE
LCFSB	LCFS-B MIX WITH INDUSTRY WASTE AGGREGATE

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

DICTIONARIES

LCFSC	LCFS-C MIX WITH INDUSTRY WASTE AGGREGATE
LCFS	LCF WITH INDUSTRY WASTE AS PAVEMENT AGGREGATE
LIGHTS	IN PAVEMENT LIGHTING SYSTEM
LOC	LOCATION
LRW	LANDING ROLL WEIGHT
LTSUB	LIME TREATED SUBGRADE, P-155
MID	MID PORTION OF RUNWAY OR TAXIWAY
MLG	MAIN LANDING GEAR LOAD OF AIRCRAFT
MLRW	MAX. LANDING WEIGHT OF AIRCRAFT
MOD	MOBILIZATION AND DEMOBILIZATION COST OF MATERIAL PROCESSING FACILITIES
MOD(N)	MOD FOR NORMAL SIZE OF RUNWAY AND TAXIWAY CONSTRUCTION
MOD(S)	MOD FOR SMALL SIZE OF CONSTRUCTION PROGRAM
MTOW	MAX. TAKE-OFF WEIGHT OF AIRCRAFT
MWFPRT	SUMMARY OF FAM STRESSES AND DEFLECTIONS FROM GELS
MWPPRT	SUMMARY OF PFL STRESSES AND DEFLECTIONS FROM GELS
MWPRT	SUMMARY OF PAVEMENT DESIGN THICKNESSES FROM GELS
NBL	MATURITY OF REVENUE BOND, NUMBER OF YEARS
NDT	NONDESTRUCTIVE TEST PROGRAM
NDT	NONDESTRUCTIVE TEST
NORM	NORMAL AIRPORT NAVIGATION SIGNS
NORM	NORMAL DRY OPERATION
NSLP	EFFECTIVE FUNCTIONAL(SERVICE) LIFE OF PAVEMENT, NUMBER OF YEARS
NWHEEL	NUMBER OF MLG WHEELS PER AIRCRAFT
OC1	4 IN. EXACOV ON 8 IN. EXPC
OC2	4 IN. EXACOV ON 10 IN. EXPC
OC3	4 IN. EXACOV ON 12 IN. EXPC
OC4	6 IN. EXACOV ON 10 IN. EXPC
OC5	6 IN. EXACOV ON 12 IN. EXPC
OC6	6 IN. EXPCOV ON 10 IN. EXPC
OC7	6 IN. EXPCOV ON 12 IN. EXPC
OEW	OPERATIONAL EMPTY WEIGHT OF AIRCRAFT
OVSFKL	OVERSTRESS FACTOR FOR KEEL OR OTHER UNDEFINED AREA
OVSFSD	OVERSTRESS FACTOR FOR SIDES
PAV	EXISTING PAVEMENT
PAVDES	PAVEMENT DESIGN PROGRAM
PCBT	COST OF PORTLAND CEMENT, BULK PER TON
PCC	PORTLAND CEMENT CONCRETE, P-501
PCCR	REINFORCED PORTLAND CEMENT CONCRETE, P-501, P-610
PCV	PRESENT CASH VALUE OF TOTAL PAVEMENT DURING SERVICE LIFE, $/S.Y.
PFL	PRESENT FUNCTIONAL LIFE IN YEARS OF AIRCRAFT MOVEMENT(ANDA/AAND)
PFLPAV	EXISTING PAVEMENT FOR PFL ANALYSIS
PFLPAV	EXISTING PAVEMENT
PLF	BEARING FACTOR
POZBT	COST OF POZZOLAN OR FLYASH, BULK PER TON

BURLINGTON INTERNATICNAL AIRPORT - FAA NEW ENGLAND REGION

DICTIONARIES

PRDICT	SUMMARY OF ALL DICTIONARIES
PSI	TIRE PRESSURE
R	RIGHT OF CENTER LINE
RADIUS	RADIUS OF CONTACT AREA OF AIRCRAFT MLG WHEEL
RANGE	DISTANCE RANGE OF AIRCRAFT(SHORT,MEDIUM,LONG)
RGF	RANGE FACTOR
RLC	ROLLED LEAN CONCRETE
RPWT	RAMP WEIGHT OF AIRCRAFT
RSWLB	COST OF REINFORCING STEEL (WIRE MESH) PER POUND
RW	RUNWAY
SDFC	SIDE FACTOR FOR UNIFORM PAVEMENT CROSS-SECTION
SERVYR	DESIGN FUNCTIONAL(SERVICE) LIFE IN YEARS
SFST	COST OF SELECTED FILL SAND PER TON
SILE	SIDE STRIPS OF RUNWAY OR TAXIWAY
SIGMA	HORIZONTAL STRESS IN PAVEMENT COMPONENT
SIGMAT	HORIZONTAL TENSILE STRESS IN PAVEMENT COMPONENT
SLEHR	RATE OF SKILLED EQUIPMENT OPERATOR PER HOUR
SSBS	SELECTED SUB-BASE, P-154
STR/MT	PAVEMENT FUNCTION GOVERNED BY WORKING STRESS AND MAINTENANCE NEEDS
STRESS	CONVERSION FACTOR E-VALUE TO TENSILE STRESS
SUB	SUBGRADE SUPPORT
SUMZ	STATIC SURFACE DEFLECTION AS COMPUTED BY NDT PROGRAM
TC	TOUCH DOWN AREA
TDW	TOUCH-DOWN WEIGHT
TM	TERMINAL
TOW	TAKE-OFF WEIGHT
TW	TAXIWAY
ULSTR	ULTIMATE SAFE TENSILE STRESS
VEL	VELOCITY OF AIRCRAFT EQUIVALENT TO FULL STATIC LOAD WITHOJT WING LIFT
VISUAL	VISUAL LANDING SYSTEM
WAPCV	WEIGHTED AVERAGE OF PRESENT CASH VALUE
WET	WET BASE, OCCASIONALLY PONDED
WGT	WEIGHT OF MLG PER TIRE
WSTR	SAFE WORKING TENSILE STRESS
WZ	SURFACE DEFLECTION OF PAVEMENT
WZERO	WZ AT X = 0, Y = 0
XMAX	DISTANCE BETWEEN OUTERMOST WHEELS
XNZ	TRANSVERSE WHEEL SPACING OF THE LANDING GEAR
XTW	CROSS TAXIWAY
Z(I)	DYNAMIC RESPONSE OF SUB OR PAV IN INCH AT ITH TEST
Z(N)	DYNAMIC RESPONSE AT CUT-OFF HIGH FREQUENCY TEST
ZDEF	SURFACE DEFLECTION OF PAVEMENT MODEL FROM GELS
>5.00	ANDA/AAND>5.

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REGIONAL COST VALUES
REGIONAL COST VALUES
TYPE        FACILITY  FACILITY  FACILITY  FACILITY  FACILITY
BANDWIDTH   CODE1     CODE2     RW        TW        HP
DI          RW        TW        HP
VEL         RW        TW        HP
AIRCRAFT    CODE      MTOW      MLRW      CEW       RANGE
TCW         AIRCRAFT TAKE-OFF WEIGHTS
TCW         AIRCRAFT TAKE-OFF WEIGHTS
FINANCE     AIRD      ARCD      ASCCC     ASCMC     NBL       NSLP
FORECAST    ADM       ATD
PFLDI
DESIGN      AIRCRAFT  WEIGHT
CLASS       CODE      DVSFAL    DVSFSD    STRESS    FATIST    COVAR     A1
LAYER       CODE      EVALUE    POISSON   MCD(S)    MCD(N)
LAYER       PCDT      FIAGT     COAGT     ASCLT     HLBT      POZBT     SFST
PAVEMENT    CODE      LAYER     THICKNESS EVALUE    POISSON
ITERATE     PAVEMENT  LAYER     HMIN      HMAX      HSTEP
NEW PAVEMENT DSUB GRID EVALUES
OVERLAY PAVEMENT DPAV GRID EVALUES
PAVEMENT NUMBER       KEEL      SIDE
PFLPAV      CODE      LAYER     THICKNESS EVALUE
PFLPAV DSUB GRID EVALUES
PFLPAV      CLASS     LAYER FOR STR/MT
CLASS       PFLPAV FOR ANC/ANS
CLASS       PAVEMENT  PFLPAV FOR AND/ANS
PAVEMENT    PFLPAV    CLASS     LAYER FOR STR/MT
FACILITY AND STATION IDENTIFICATIONS
STATISTICALLY PROCESSED NDT GROUP DATA
OPERATIONAL AIRCRAFT WEIGHTS
ADM         ADMSUG    AVERAGE DAILY MOVEMENTS, SUGGESTED
ATD         ATDSUG    AIRPORT TRAFFIC DISTRIBUTION, SUGGESTED
REGIONAL COST VALUES
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PRINT     INPUT


USER      H. TOMITA
JOBCODE   BTV-ANE
JOB       BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION
RUN       NET3
RUN       PFL
RUN       PAVDES
PRINT     DICTIONARY
PRINT     INPUT
FACILITY ANE STATION IDENTIFICATIONS
FACILITY  CODE       STA-FROM  STA-TO
1         RW 15-33   000.0     080.0
2         RW 1-19    016.0     052.0
3         TW A       016.0     051.0
4         GATE/APRN  026.0     035.0
5         XTWS TO A  000.0     000.0
6         TW B       000.0     009.0
7         TW C       000.0     022.0
8         APRON GA   006.0     015.0
9         TW D       000.0     025.0
10        TW E       001.0     006.0
11        TW F       001.0     049.0
12        APRN VANG  048.0     063.0
13        RW1-19EXT  000.0     016.0
14        TW NEW     000.0     037.0
15        XTW-GA NU  000.0     010.0
16        TW - RW19  000.0     018.0
**
STATISTICALLY PROCESSED NOT GROUP DATA
FACILITY  STA-FROM  STA-TO    SUMZ      EVALUE    DRAINAGE  TEMP.   PFLPAV
1         000.0     003.0               179545.   NORM              13/CC7
          003.0     069.0               34885.    NORM              2 /AC2
          069.0     076.5               27745.    NORM              1 /AC1
          076.5     080.0               165589.   NORM              13/CC7
2         016.0     052.0               32267.    NORM              1 /AC1
3         016.0     051.0               29191.    NORM              1 /AC1
4         026.0     035.0               21726.    NORM              1 /AC1
5         000.0     000.0               22234.    NORM              1 /AC1
6         000.0     009.0               32320.    NORM              1 /AC1
7         000.0     022.0               34350.    NORM              1 /AC1
8         006.0     015.0               52994.    NORM              14/CC1
9         000.0     025.0               31625.    NORM              1 /AC1
10        001.0     006.0               26376.    NORM              1 /AC1
11        001.0     049.0               36029.    NORM              1 /AC1
12        048.0     063.0               24670.    NORM              1 /AC1
13        000.0     016.0               10667.    NORM              0 /SUB
14        000.0     037.0               10395.    NORM              0 /SUB
15        000.0     010.0               10381.    NORM              0 /SUB
16        000.0     018.0               10327.    NORM              0 /SUB
**
OPERATIONAL AIRCRAFT WEIGHTS
AIRCRAFT  CODE       RANGE     LOAD FACTOR
1         B747
2         DC10/30
3         DC10/10
4         LJG11
5         DC8(B707)           MEDIUM
6         B720
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7	B727-200	MEDIUM	
8	B727-100	MEDIUM	
9	DC9(B737)	MEDIUM	
10	F27	MEDIUM	
11	DCX-200		
12	B757		
13	B767-200		
14	A30084		
15	CONCORDE		

**

ACM ACMSUG AVERAGE DAILY MOVEMENTS, SUGGESTED
NUMBER OF AIRCRAFT MOVEMENTS - PEAK MONTH

AIRCRAFT	1977	1978	1983	1988	1993	1998
1						
2						
3						
4						
5	.1	.1	.2	.3	.4	.5
6						
7	0.	0.	6.	7.	9.	12.
8	0.	0.	0.	14.	16.	17.
9	18.	19.	20.	10.	6.	4.
10	11.	10.	9.	11.	20.	22.
11						
12						
13						
14						
15						

**

ATD ATDSUG AIRPORT TRAFFIC DISTRIBUTION, SUGGESTED

FACILITY	STA-FROM	STA-TO	YEAR	TDW%	LRW%	TDW%
1	000.0	030.0	1978	120.	100.	70.
			1983	80.	100.	80.
	030.0	053.0	1978	140.	100.	0.
			1983	100.	100.	0.
	053.0	078.0	1978	40.	100.	30.
			1983	20.	100.	20.
2	016.0	052.0	1978	20.	20.	0.
3	016.0	051.0	1978	80.	80.	0.
4	026.0	035.0	1978	60.	60.	0.
5	000.0	000.0	1978	20.	20.	0.
6	000.0	009.0	1978	20.	20.	0.
7	000.0	022.0	1978	30.	30.	0.
8	006.0	015.0	1978	10.	10.	0.
9	000.0	025.0	1978	20.	20.	0.
10	001.0	006.0	1978	10.	10.	0.
11	001.0	049.0	1978	40.	40.	0.
12	048.0	063.0	1978	20.	20.	0.
13	000.0	016.0	1978	0.	0.	0.
			1983	20.	20.	10.
14	000.0	037.0	1978	0.	0.	0.
			1983	80.	80.	0.
15	000.0	010.0	1978	0.	0.	0.
			1983	20.	20.	0.
16	000.0	018.0	1978	0.	0.	0.
			1983	10.	10.	0.

**

REGIONAL COST VALUES

CLST	CODE	DATE	ANF

**

PFL PRESENT FUNCTIONAL LIFE

FACILITY	SERVYR	BANDWIDTH	FORECAST
1	1	2	FAMSUG
2	1	2	FAMSUG
3	1	1	FAMSUG
4	1	1	FAMSUG
5	1	1	FAMSUG
6	1	1	FAMSUG
7	1	1	FAMSUG
8	1	1	FAMSUG
9	1	1	FAMSUG
10	1	1	FAMSUG
11	1	1	FAMSUG
12	1	1	FAMSUG

**

PAVDES PAVEMENT DESIGN

FACILITY	SERVYR	BANDWIDTH	FORECAST
1	5	2	FAMSUG
1	20	2	FAMSUG
2	5	2	FAMSUG
2	20	2	FAMSUG
3	5	1	FAMSUG
3	20	1	FAMSUG
4	5	1	FAMSUG
4	20	1	FAMSUG
5	5	1	FAMSUG
5	20	1	FAMSUG
6	5	1	FAMSUG
6	20	1	FAMSUG
7	5	1	FAMSUG
7	20	1	FAMSUG
8	5	1	FAMSUG
8	20	1	FAMSUG
9	5	1	FAMSUG
9	20	1	FAMSUG
10	5	1	FAMSUG
10	20	1	FAMSUG
11	5	1	FAMSUG
11	20	1	FAMSUG
12	5	1	FAMSUG
12	20	1	FAMSUG
13	20	2	FAMSUG
14	20	1	FAMSUG
15	20	1	FAMSUG
16	20	1	FAMSUG

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NAI C. YANG, ENGINEERING CONSULTANT NDT/3 1

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

DEFAULT SYSTEM FOR PFL

PFLPAV	CODE	LAYER	THICKNESS	EVALUE	POISSON
1	AC1	EXAC	3.0	140000.	0.24
		EXBSA	6.0	50000.	0.27
		SUB	INFI	++++	
2	AC2	EXAC	6.0	140000.	0.24
		EXBSA	6.0	50000.	0.27
		SUB	INFI	++++	
3	AC3	EXAC	9.0	140000.	0.24
		EXBSA	6.0	50000.	0.27
		SUB	INFI	++++	
4	AC4	EXAC	12.0	140000.	0.24
		EXBSA	6.0	50000.	0.27
		SUB	INFI	++++	
5	AC5	EXAC	16.0	140000.	0.24
		EXBSA	6.0	50000.	0.27
		SUB	INFI	++++	
6	AC6	EXAC	20.0	140000.	0.24
		EXBSA	6.0	50000.	0.27
		SUB	INFI	++++	
7	CC1	EXPC	8.0	3000000.	0.13
		EXBSC	8.0	30000.	0.29
		SUB	INFI	++++	
8	CC2	EXPC	10.0	3000000.	0.13
		EXBSC	8.0	30000.	0.29
		SUB	INFI	++++	
9	CC3	EXPC	12.0	3000000.	0.13
		EXBSC	8.0	30000.	0.29
		SUB	INFI	++++	
10	CC4	EXPC	14.0	3000000.	0.13
		EXBSC	8.0	30000.	0.29
		SUB	INFI	++++	
11	CC5	EXPC	15.0	3000000.	0.13
		EXBSC	8.0	30000.	0.29
		SUB	INFI	++++	

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

DEFAULT SYSTEM FOR PFL

PFLPAV	CODE	LAYER	THICKNESS	EVALUE	POISSON
12	CC6	EXPC	16.0	3000000.	0.13
		EXBSC	6.0	30000.	0.29
		SUB	INFI	++++	
13	CC7	EXPC	17.0	3000000.	0.13
		EXBSC	8.0	30000.	0.29
		SUB	INFI	++++	
14	OC1	EXACOV	4.0	180000.	0.23
		EXPC	8.0	3000000.	0.13
		EXBSC	8.0	30000.	0.29
		SUB	INFI	++++	
15	OC2	EXACOV	4.0	180000.	0.23
		EXPC	10.0	3000000.	0.13
		EXBSC	8.0	30000.	0.29
		SUB	INFI	++++	
16	OC3	EXACOV	4.0	180000.	0.23
		EXPC	12.0	3000000.	0.13
		EXBSC	8.0	30000.	0.29
		SUB	INFI	++++	
17	CC4	EXACOV	6.0	180000.	0.23
		EXPC	10.0	3000000.	0.13
		EXBSC	8.0	30000.	0.29
		SUB	INFI	++++	
18	OC5	EXACOV	6.0	180000.	0.23
		EXPC	12.0	3000000.	0.13
		EXBSC	8.0	30000.	0.29
		SUB	INFI	++++	
19	CC6	EXPCOV	6.0	4500000.	0.12
		EXACOV	1.0	180000.	0.23
		EXPC	10.0	3000000.	0.13
		EXBSC	8.0	30000.	0.29
		SUB	INFI	++++	
20	CC7	EXPCOV	6.0	4500000.	0.12
		EXACOV	1.0	180000.	0.23
		EXPC	12.0	3000000.	0.13
		EXBSC	8.0	30000.	0.29
		SUB	INFI	++++	

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

NDT INVENTORY FILE

FACILITY	CODE	STA-FROM	STA-TO	DRAINAGE AT TEST	EPAV NORM	EPAV WET	ESUB NORM	ESUB WET	PFLPAV
1	RW 15-33	0.0	3.00	NORM	179545.	126110.	34283.	23570.	13 CC7
		3.00	69.00	NORM	24885.	25165.	14158.	8495.	2 AC2
		69.00	76.50	NORM	27745.	19696.	13980.	8388.	1 AC1
		76.50	80.00	NORM	165589.	117538.	30628.	18376.	13 CC7
2	RW 1-19	16.00	52.00	NORM	32267.	22872.	17732.	10639.	1 AC1
3	TW A	16.00	51.00	NORM	29191.	20480.	15015.	9009.	1 AC1
4	GATE/APRN	26.00	35.00	NORM	21726.	15641.	9903.	5942.	1 AC1
5	XTWS TO A	0.0	0.0	NORM	22234.	15992.	10239.	6143.	1 AC1
6	TW B	0.0	9.00	NORM	32320.	22928.	17788.	10673.	1 AC1
7	TW C	0.0	22.00	NORM	34350.	25115.	19810.	11886.	1 AC1
8	APRON GA	6.00	15.00	NORM	52594.	37313.	7899.	4739.	14 OC1
9	TW D	0.0	25.00	NORM	31625.	22208.	17037.	10222.	1 AC1
10	TW E	1.00	6.00	NORM	26376.	18699.	12896.	7738.	1 AC1
11	TW F	1.00	49.00	NORM	36029.	26245.	21310.	12786.	1 AC1
12	APRN VANG	48.00	63.00	NORM	24670.	17331.	11656.	6994.	1 AC1
13	RW1-19EXT	0.0	16.00	NORM	10667.	6400.	10667.	6400.	0 SUB
14	TW NEW	0.0	37.00	NORM	10395.	6237.	10395.	6237.	0 SUB
15	XTW-GA NU	0.0	10.00	NORM	10381.	6229.	10381.	6229.	0 SUB
16	TW - RW19	0.0	18.00	NORM	10327.	6196.	10327.	6196.	0 SUB

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

ATM, AIRCRAFT TRAFFIC MOVEMENTS

FACILITY	SERVYR	FORECAST	STATION FROM-TO		B747 F27	DC10/30 DCX-200	DC10/10 B757	L1011 B767-200	DC8(B707) A300B4	B720 CONCORDE	B727-200	B727-100	DC9(B737)
Rw 15-33	1	FAMSUG	0.- 30.	TDW:	0.0	0.0	0.0	0.0	4.380E 01	0.0	0.0	0.0	8.103E 03
					4.599E 03	0.0	0.0	0.0	0.0	0.0			
				LRW:	0.0	0.0	0.0	0.0	3.650E 01	0.0	0.0	0.0	6.752E 03
					3.832E 03	0.0	0.0	0.0	0.0	0.0			
				TDW:	0.0	0.0	0.0	0.0	2.555E 01	0.0	0.0	0.0	4.727E 03
					2.683E 03	0.0	0.0	0.0	0.0	0.0			
Rw 15-33	1	FAMSUG	30.- 53.	TDW:	0.0	0.0	0.0	0.0	5.111E 01	0.0	0.0	0.0	9.453E 03
					5.365E 03	0.0	0.0	0.0	0.0	0.0			
				LRW:	0.0	0.0	0.0	0.0	3.650E 01	0.0	0.0	0.0	6.752E 03
					3.832E 03	0.0	0.0	0.0	0.0	0.0			
				TDW:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
					0.0	0.0	0.0	0.0	0.0	0.0			
Rw 15-33	1	FAMSUG	53.- 76.	TDW:	0.0	0.0	0.0	0.0	1.460E 01	0.0	0.0	0.0	2.701E 03
					1.533E 03	0.0	0.0	0.0	0.0	0.0			
				LRW:	0.0	0.0	0.0	0.0	3.650E 01	0.0	0.0	0.0	6.752E 03
					3.832E 03	0.0	0.0	0.0	0.0	0.0			
				TDW:	0.0	0.0	0.0	0.0	1.095E 01	0.0	0.0	0.0	2.026E 03
					1.150E 03	0.0	0.0	0.0	0.0	0.0			
Rw 1-19	1	FAMSUG	16.- 52.	TDW:	0.0	0.0	0.0	0.0	7.300E 00	0.0	0.0	0.0	1.350E 03
					7.665E 02	0.0	0.0	0.0	0.0	0.0			
				LRW:	0.0	0.0	0.0	0.0	7.300E 00	0.0	0.0	0.0	1.350E 03
					7.665E 02	0.0	0.0	0.0	0.0	0.0			
				TDW:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
					0.0	0.0	0.0	0.0	0.0	0.0			
Tw A	1	FAMSUG	16.- 51.	TDW:	0.0	0.0	0.0	0.0	2.920E 01	0.0	0.0	0.0	5.402E 03
					3.066E 03	0.0	0.0	0.0	0.0	0.0			
				LRW:	0.0	0.0	0.0	0.0	2.920E 01	0.0	0.0	0.0	5.402E 03
					3.066E 03	0.0	0.0	0.0	0.0	0.0			
				TDW:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
					0.0	0.0	0.0	0.0	0.0	0.0			
GATE/APRN	1	FAMSUG	28.- 55.	TDW:	0.0	0.0	0.0	0.0	2.190E 01	0.0	0.0	0.0	4.051E 03
					2.299E 03	0.0	0.0	0.0	0.0	0.0			
				LRW:	0.0	0.0	0.0	0.0	2.190E 01	0.0	0.0	0.0	4.051E 03
					2.299E 03	0.0	0.0	0.0	0.0	0.0			
				TDW:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
					0.0	0.0	0.0	0.0	0.0	0.0			

NAI C. YANG, ENGINEERING CONSULTANT OPWGT 1

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

OPERATIONAL AIRCRAFT WEIGHTS

AIRCRAFT	CODE	RANGE	LOAD FACTOR	TOW	LRW	TDW
1	B747	LONG	HIGH	615000.	507852.	761777.
2	DC10/30	LONG	HIGH	515000.	383893.	575340.
3	DC10/10	LONG	HIGH	390000.	337538.	506308.
4	L1011	LONG	HIGH	390000.	334750.	502125.
5	DC8(B707)	LONG	MEDIUM	280000.	220117.	330176.
6	B720	MEDIUM	HIGH	220000.	172878.	259317.
7	B727-200	MEDIUM	MEDIUM	157000.	139400.	209100.
8	B727-100	MEDIUM	MEDIUM	135000.	121909.	182864.
9	DC9(B737)	SHORT	MEDIUM	85000.	77000.	115500.
10	F27	SHORT	MEDIUM	40000.	36000.	54000.
11	DCX-200	LONG	HIGH	350000.	290659.	435989.
12	B757	MEDIUM	HIGH	218000.	191720.	287580.
13	B767-200	MEDIUM	HIGH	270000.	247336.	371005.
14	A300B4	MEDIUM	HIGH	333000.	285919.	428878.
15	CONCORDE	XLONG	HIGH	355000.	232600.	348900.

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

EQUIVALENT SINGLE TYPE AIRCRAFT OPERATION

EQ. AIRCRAFT: B727-200 WEIGHT: 170000. LBS CLASS: 2/AC FACILITY: RW 15-33
BANDWIDTH: LIGHTS/ILS FORECAST: FAMSUG YEAR: 1

STATIONS C. TO 30. LOCATION: KEEL

	DEFLECTION CRITERIA			AND			AAND	STRESS CRITERIA			ANS			AANS
	TOW	LRW	TDW	TOW	LRW	TDW		TOW	LRW	TDW	TOW	LRW	TDW	
B747	2.2E 00	1.4E 00	3.2E 00	0.0	0.0	0.0		9.1E-02	2.7E-02	3.4E-01	0.0	0.0	0.0	
DC10/30	2.5E 00	1.3E 00	3.0E 00	0.0	0.0	0.0		4.6E-01	8.0E-02	8.6E-01	0.0	0.0	0.0	
DC10/10	2.4E 00	1.4E 00	3.2E 00	0.0	0.0	0.0		3.8E-01	1.6E-01	1.7E 00	0.0	0.0	0.0	
L1011	1.9E 00	1.4E 00	3.1E 00	0.0	0.0	0.0		8.8E-01	3.1E-01	4.5E 00	0.0	0.0	0.0	
DC8(B707)	1.3E 00	6.0E-01	1.9E 00	2.3E 01	7.1E 00	7.9E-03		1.4E-01	2.5E-02	4.5E-01	2.3E 00	3.1E-01	1.0E-02	
B720	7.8E-01	3.0E-01	1.3E 00	0.0	0.0	0.0		5.2E-03	1.4E-03	1.3E-02	0.0	0.0	0.0	
B727-200	7.9E-01	5.2E-01	1.7E 00	0.0	0.0	0.0		5.3E-01	2.1E-01	5.4E 00	0.0	0.0	0.0	
B727-100	4.6E-01	3.0E-01	1.2E 00	0.0	0.0	0.0		1.6E-01	7.2E-02	1.8E 00	0.0	0.0	0.0	
DC9(B737)	4.7E-02	2.4E-02	2.7E-01	1.4E-01	1.4E-02	9.4E-01		3.7E-03	1.9E-03	3.4E-02	4.9E 00	2.0E 00	2.9E-02	
F27	2.2E-05	3.5E-06	1.4E-03	6.6E-11	1.1E-12	8.8E 00		4.1E-05	2.5E-05	1.9E-04	2.5E-02	1.2E-02	5.7E-05	
DCX-200	1.6E 00	9.5E-01	2.5E 00	0.0	0.0	0.0		2.0E-01	6.2E-02	7.3E-01	0.0	0.0	0.0	
B757	6.5E-01	3.9E-01	1.5E 00	0.0	0.0	0.0		5.7E-03	2.7E-03	2.7E-02	0.0	0.0	0.0	
B767-200	8.9E-01	6.6E-01	2.0E 00	0.0	0.0	0.0		6.3E-02	3.6E-02	5.1E-01	0.0	0.0	0.0	
A300B4	1.7E 00	1.2E 00	2.8E 00	0.0	0.0	0.0		2.1E-01	8.0E-02	1.1E 00	0.0	0.0	0.0	
CONCORDE	2.1E 00	6.7E-01	2.0E 00	0.0	0.0	0.0		2.6E 00	8.1E-02	2.2E 00	0.0	0.0	0.0	
				2.3E 01	7.1E 00	9.8E 00	4.0E 01				7.2E 00	2.3E 00	3.9E-02	9.6E 00

STATIONS 30. TO 53. LOCATION: KEEL

	DEFLECTION CRITERIA			AND			AAND	STRESS CRITERIA			ANS			AANS
	TOW	LRW	TDW	TOW	LRW	TDW		TOW	LRW	TDW	TOW	LRW	TDW	
B747	2.2E 00	1.4E 00	3.2E 00	0.0	0.0	0.0		9.1E-02	2.7E-02	3.4E-01	0.0	0.0	0.0	
DC10/30	2.5E 00	1.3E 00	3.0E 00	0.0	0.0	0.0		4.6E-01	8.0E-02	8.6E-01	0.0	0.0	0.0	
DC10/10	2.4E 00	1.4E 00	3.2E 00	0.0	0.0	0.0		3.8E-01	1.6E-01	1.7E 00	0.0	0.0	0.0	
L1011	1.9E 00	1.4E 00	3.1E 00	0.0	0.0	0.0		8.8E-01	3.1E-01	4.5E 00	0.0	0.0	0.0	
DC8(B707)	1.3E 00	6.0E-01	1.9E 00	2.7E 01	7.1E 00	0.0		1.4E-01	2.5E-02	4.5E-01	2.7E 00	3.1E-01	0.0	
B720	7.8E-01	3.0E-01	1.3E 00	0.0	0.0	0.0		5.2E-03	1.4E-03	1.3E-02	0.0	0.0	0.0	
B727-200	7.9E-01	5.2E-01	1.7E 00	0.0	0.0	0.0		5.3E-01	2.1E-01	5.4E 00	0.0	0.0	0.0	
B727-100	4.6E-01	3.0E-01	1.2E 00	0.0	0.0	0.0		1.6E-01	7.2E-02	1.8E 00	0.0	0.0	0.0	
DC9(B737)	4.7E-02	2.4E-02	2.7E-01	1.6E-01	1.4E-02	0.0		3.7E-03	1.9E-03	3.4E-02	5.7E 00	2.0E 00	0.0	
F27	2.2E-05	3.5E-06	1.4E-03	3.8E-11	1.1E-12	0.0		4.1E-05	2.5E-05	1.9E-04	2.9E-02	1.2E-02	0.0	
DCX-200	1.6E 00	9.5E-01	2.5E 00	0.0	0.0	0.0		2.0E-01	6.2E-02	7.3E-01	0.0	0.0	0.0	
B757	6.5E-01	3.9E-01	1.5E 00	0.0	0.0	0.0		5.7E-03	2.7E-03	2.7E-02	0.0	0.0	0.0	
B767-200	8.9E-01	6.6E-01	2.0E 00	0.0	0.0	0.0		6.3E-02	3.6E-02	5.1E-01	0.0	0.0	0.0	
A300B4	1.7E 00	1.2E 00	2.8E 00	0.0	0.0	0.0		2.1E-01	8.0E-02	1.1E 00	0.0	0.0	0.0	
CONCORDE	2.1E 00	6.7E-01	2.0E 00	0.0	0.0	0.0		2.6E 00	8.1E-02	2.2E 00	0.0	0.0	0.0	
				2.7E 01	7.1E 00	0.0	3.4E 01				8.4E 00	2.3E 00	0.0	1.1E 01

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

SUMMARY OF PRESENT FUNCTIONAL LIFE

AS MEASURED BY PROGRESSIVE DETERIORATION OF EXISTING
PAVEMENT SURFACE DUE TO ANTICIPATED AIRCRAFT MOVEMENTS

DI =0.12G SMOOTH PAVEMENT SURFACE
DI =0.18G OPERATIONAL SURFACE
DI =0.25G UPPER LIMIT OF ROUGHNESS TOLERANCE

FACILITY	STATION FROM-TO	VEL	NDT/3 ESUB NORM	NDT/3 ESUB WET	PFLPAV	PFL IN YEARS (1977 TRAFFIC) GOVERNED BY DEF/DI DI .12G NORM	.18G NORM	.25G NORM	.12G WET	.18G WET	.25G WET	IMPACT	GOVERNED BY STR/MT .18G NORM	.30G NORM	.18G WET	.30G WET
RW 15-33	0.- 3.	145.	34283.	20570.	13 CC7	>5.00	>5.00	>5.00	>5.00	>5.00	>5.00		>5.00	>5.00	>5.00	>5.00
RW 15-33	3.- 30.	145.	14158.	8495.	2 AC2	2.16	>5.00	>5.00	1.19	>5.00	>5.00		>5.00	>5.00	>5.00	>5.00
RW 15-33	30.- 53.	145.	14158.	8495.	2 AC2	2.50	>5.00	>5.00	1.39	>5.00	>5.00		>5.00	>5.00	>5.00	>5.00
RW 15-33	53.- 69.	145.	14158.	8495.	2 AC2	1.51	>5.00	>5.00	0.84	>5.00	>5.00		>5.00	>5.00	>5.00	>5.00
RW 15-33	69.- 77.	145.	13980.	8388.	1 AC1	0.31	>5.00	>5.00	0.19	3.78	>5.00		>5.00	4.03	0.00	0.00
RW 15-33	77.- 78.	145.	30628.	18376.	13 CC7	>5.00	>5.00	>5.00	>5.00	>5.00	>5.00		>5.00	>5.00	>5.00	>5.00
RW 1-19	16.- 52.	145.	17732.	10639.	1 AC1	3.92	>5.00	>5.00	2.39	>5.00	>5.00		>5.00	>5.00	0.06	0.00
TW A	16.- 51.	50.	15015.	9009.	1 AC1	>5.00	>5.00	>5.00	>5.00	>5.00	>5.00		>5.00	>5.00	0.00	0.00
GATE/APRN	26.- 35.	50.	9903.	5942.	1 AC1	>5.00	>5.00	>5.00	>5.00	>5.00	>5.00		0.00	0.00	0.00	0.00
XTWS TO A	0.- 0.	50.	10239.	6143.	1 AC1	>5.00	>5.00	>5.00	>5.00	>5.00	>5.00		0.02	0.00	0.00	0.00
TW B	0.- 9.	50.	17788.	10673.	1 AC1	>5.00	>5.00	>5.00	>5.00	>5.00	>5.00		>5.00	>5.00	0.05	0.00
TW C	0.- 22.	50.	19810.	11886.	1 AC1	>5.00	>5.00	>5.00	>5.00	>5.00	>5.00		>5.00	>5.00	0.89	0.10
APRON CA	6.- 15.	50.	7899.	4739.	14 OC1	>5.00	>5.00	>5.00	>5.00	>5.00	>5.00		0.04	0.00	0.00	0.00
TW D	0.- 25.	50.	17037.	10222.	1 AC1	>5.00	>5.00	>5.00	>5.00	>5.00	>5.00		>5.00	>5.00	0.02	0.00
TW E	1.- 6.	50.	12896.	7738.	1 AC1	>5.00	>5.00	>5.00	>5.00	>5.00	>5.00		>5.00	2.33	0.00	0.00
TW F	1.- 49.	50.	21310.	12786.	1 AC1	>5.00	>5.00	>5.00	>5.00	>5.00	>5.00		>5.00	>5.00	3.47	0.47
APRN VANG	48.- 63.	50.	11656.	6994.	1 AC1	>5.00	>5.00	>5.00	>5.00	>5.00	>5.00		0.72	0.08	0.00	0.00

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

ATM, AIRCRAFT TRAFFIC MOVEMENTS

FACILITY	SERVYR	FORECAST	STATION FROM-TO		B747 F27	DC10/30 DCX-200	DC10/10 B757	L1011 B767-200	DC8(B707) A30084	B720 CONCORDE	B727-200	B727-100	DC9(B737
Rw 15-33	5	FAMSUG	0.- 30.	TOW:	0.0	0.0	0.0	0.0	3.285E 02	0.0	6.570E 03	0.0	4.270E 0
					2.080E 04	0.0	0.0	0.0	0.0	0.0			
				LRW:	0.0	0.0	0.0	0.0	2.737E 02	0.0	5.475E 03	0.0	3.559E 0
					1.734E 04	0.0	0.0	0.0	0.0	0.0			
				TOW:	0.0	0.0	0.0	0.0	1.916E 02	0.0	3.832E 03	0.0	2.491E 0
					1.214E 04	0.0	0.0	0.0	0.0	0.0			
Rw 15-33	5	FAMSUG	30.- 53.	TOW:	0.0	0.0	0.0	0.0	3.832E 02	0.0	7.665E 03	0.0	4.982E 0
					2.427E 04	0.0	0.0	0.0	0.0	0.0			
				LRW:	0.0	0.0	0.0	0.0	2.737E 02	0.0	5.475E 03	0.0	3.559E 0
					1.734E 04	0.0	0.0	0.0	0.0	0.0			
				TOW:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
					0.0	0.0	0.0	0.0	0.0	0.0			
Rw 15-33	5	FAMSUG	53.- 78.	TOW:	0.0	0.0	0.0	0.0	1.095E 02	0.0	2.190E 03	0.0	1.423E 0
					6.935E 03	0.0	0.0	0.0	0.0	0.0			
				LRW:	0.0	0.0	0.0	0.0	2.737E 02	0.0	5.475E 03	0.0	3.559E 0
					1.734E 04	0.0	0.0	0.0	0.0	0.0			
				TOW:	0.0	0.0	0.0	0.0	8.212E 01	0.0	1.642E 03	0.0	1.068E 0
					5.201E 03	0.0	0.0	0.0	0.0	0.0			
Rw 15-33	20	FAMSUG	0.- 30.	TOW:	0.0	0.0	0.0	0.0	1.861E 03	0.0	4.307E 04	5.621E 04	8.358E 0
					8.869E 04	0.0	0.0	0.0	0.0	0.0			
				LRW:	0.0	0.0	0.0	0.0	2.190E 03	0.0	5.110E 04	7.026E 04	8.669E 0
					1.022E 05	0.0	0.0	0.0	0.0	0.0			
				TOW:	0.0	0.0	0.0	0.0	1.725E 03	0.0	4.033E 04	5.621E 04	6.579E 0
					8.003E 04	0.0	0.0	0.0	0.0	0.0			
Rw 15-33	20	FAMSUG	30.- 53.	TOW:	0.0	0.0	0.0	0.0	2.299E 03	0.0	5.329E 04	7.026E 04	1.009E 0
					1.091E 05	0.0	0.0	0.0	0.0	0.0			
				LRW:	0.0	0.0	0.0	0.0	2.190E 03	0.0	5.110E 04	7.026E 04	8.669E 0
					1.022E 05	0.0	0.0	0.0	0.0	0.0			
				TOW:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
					0.0	0.0	0.0	0.0	0.0	0.0			
Rw 15-33	20	FAMSUG	53.- 78.	TOW:	0.0	0.0	0.0	0.0	4.927E 02	0.0	1.131E 04	1.405E 04	2.445E 0
					2.391E 04	0.0	0.0	0.0	0.0	0.0			
				LRW:	0.0	0.0	0.0	0.0	2.190E 03	0.0	5.110E 04	7.026E 04	8.669E 0
					1.022E 05	0.0	0.0	0.0	0.0	0.0			
				TOW:	0.0	0.0	0.0	0.0	4.654E 02	0.0	1.077E 04	1.405E 04	2.090E 0
					2.217E 04	0.0	0.0	0.0	0.0	0.0			

NAI C. YANG, ENGINEERING CONSULTANT OPWGT 1

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

OPERATIONAL AIRCRAFT WEIGHTS

AIRCRAFT	CODE	RANGE	LOAD FACTOR	TOW	LRW	TOW
1	B747	LONG	HIGH	615000.	507852.	761777.
2	DC10/30	LONG	HIGH	515000.	383893.	575940.
3	DC10/10	LONG	HIGH	390000.	337538.	506308.
4	L1011	LONG	HIGH	390000.	334750.	502125.
5	DC8(6707)	LONG	MEDIUM	280000.	220117.	330176.
6	B720	MEDIUM	HIGH	220000.	172878.	259317.
7	B727-200	MEDIUM	MEDIUM	157000.	139400.	209100.
8	B727-100	MEDIUM	MEDIUM	135000.	121909.	182864.
9	DC9(B737)	SHORT	MEDIUM	85000.	77000.	115500.
10	F27	SHORT	MEDIUM	40000.	36000.	54000.
11	DCX-200	LONG	HIGH	350000.	290659.	435989.
12	B757	MEDIUM	HIGH	218000.	191720.	287580.
13	B767-200	MEDIUM	HIGH	270000.	247336.	371005.
14	A300B4	MEDIUM	HIGH	333000.	285919.	428878.
15	CONCORDE	XLONG	HIGH	355000.	232600.	348900.

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

EQUIVALENT SINGLE TYPE AIRCRAFT OPERATION

EQ. AIRCRAFT: B727-200 WEIGHT: 170000. LBS CLASS: 1/LCF FACILITY: RW 15-33
BANDWIDTH: LIGHTS/ILS FORECAST: FAMSUG YEAR: 5

STATIONS 0. TO 30. LOCATION: KEEL

	DEFLECTION CRITERIA AND						AAND	STRESS CRITERIA ANS						AANS
	TOW	LRW	TDW	TOW	LRW	TDW		TOW	LRW	TDW	TOW	LRW	TDW	
B747	3.6E 00	2.7E 00	4.6E 00	0.0	0.0	0.0		2.6E-01	3.5E-02	4.1E 00	0.0	0.0	0.0	
DC10/30	3.5E 00	2.1E 00	4.0E 00	0.0	0.0	0.0		1.7E 00	5.7E-02	7.8E 00	0.0	0.0	0.0	
DC10/10	2.7E 00	2.1E 00	3.9E 00	0.0	0.0	0.0		6.4E-01	1.2E-01	2.3E 01	0.0	0.0	0.0	
L1011	2.6E 00	2.0E 00	3.8E 00	0.0	0.0	0.0		6.2E-01	1.1E-01	1.9E 01	0.0	0.0	0.0	
DC8(8707)	1.8E 00	1.0E 00	2.5E 00	4.4E 02	9.5E 01	8.4E-02		1.9E-01	1.7E-02	1.4E 00	2.4E 01	1.6E 00	2.4E-01	
B720	1.2E 00	5.5E-01	1.7E 00	0.0	0.0	0.0		2.2E-02	3.1E-03	1.1E-01	0.0	0.0	0.0	
B727-200	7.8E-01	5.1E-01	1.7E 00	6.4E 02	1.4E 02	1.2E 00		3.7E-01	9.8E-02	1.8E 01	5.0E 02	1.0E 02	2.1E 01	
B727-100	4.6E-01	3.0E-01	1.2E 00	0.0	0.0	0.0		7.0E-02	2.6E-02	2.6E 00	0.0	0.0	0.0	
DC9(8737)	5.5E-02	3.0E-02	2.5E-01	1.2E 00	1.6E-01	1.8E 00		1.9E-03	1.0E-03	2.2E-02	1.3E 01	5.6E 00	9.9E-02	
F27	1.7E-05	2.6E-06	1.0E-03	1.4E-11	3.7E-14	5.2E-01		6.1E-05	4.3E-05	1.9E-04	1.7E-01	9.4E-02	2.7E-04	
DCX-200	2.2E 00	1.5E 00	3.2E 00	0.0	0.0	0.0		1.8E-01	2.7E-02	2.6E 00	0.0	0.0	0.0	
B757	9.9E-01	6.7E-01	2.0E 00	0.0	0.0	0.0		1.9E-02	6.5E-03	3.4E-01	0.0	0.0	0.0	
B767-200	1.4E 00	1.1E 00	2.7E 00	0.0	0.0	0.0		3.4E-02	1.5E-02	1.2E 00	0.0	0.0	0.0	
A30084	2.3E 00	1.7E 00	3.4E 00	0.0	0.0	0.0		5.0E-01	8.8E-02	1.5E 01	0.0	0.0	0.0	
CONCORDE	2.6E 00	1.0E 00	2.5E 00	0.0	0.0	0.0		3.5E 00	2.6E-02	2.7E 00	0.0	0.0	0.0	
				1.1E 03	2.4E 02	3.6E 00	1.3E 03				5.4E 02	1.1E 02	2.1E 01	6.7E 02

STATIONS 30. TO 53. LOCATION: KEEL

	DEFLECTION CRITERIA AND						AAND	STRESS CRITERIA ANS						AANS
	TOW	LRW	TDW	TOW	LRW	TDW		TOW	LRW	TDW	TOW	LRW	TDW	
B747	3.6E 00	2.7E 00	4.6E 00	0.0	0.0	0.0		2.6E-01	3.5E-02	4.1E 00	0.0	0.0	0.0	
DC10/30	3.5E 00	2.1E 00	4.0E 00	0.0	0.0	0.0		1.7E 00	5.7E-02	7.8E 00	0.0	0.0	0.0	
DC10/10	2.7E 00	2.1E 00	3.9E 00	0.0	0.0	0.0		6.4E-01	1.2E-01	2.3E 01	0.0	0.0	0.0	
L1011	2.6E 00	2.0E 00	3.8E 00	0.0	0.0	0.0		6.2E-01	1.1E-01	1.9E 01	0.0	0.0	0.0	
DC8(8707)	1.8E 00	1.0E 00	2.5E 00	5.3E 02	9.5E 01	0.0		1.9E-01	1.7E-02	1.4E 00	2.8E 01	1.6E 00	0.0	
B720	1.2E 00	5.5E-01	1.7E 00	0.0	0.0	0.0		2.2E-02	3.1E-03	1.1E-01	0.0	0.0	0.0	
B727-200	7.8E-01	5.1E-01	1.7E 00	7.5E 02	1.4E 02	0.0		3.7E-01	9.8E-02	1.8E 01	5.8E 02	1.0E 02	0.0	
B727-100	4.6E-01	3.0E-01	1.2E 00	0.0	0.0	0.0		7.0E-02	2.6E-02	2.6E 00	0.0	0.0	0.0	
DC9(8737)	5.5E-02	3.0E-02	2.5E-01	1.4E 00	1.6E-01	0.0		1.9E-03	1.0E-03	2.2E-02	1.6E 01	5.6E 00	0.0	
F27	1.7E-05	2.6E-06	1.0E-03	1.6E-11	3.7E-14	0.0		6.1E-05	4.3E-05	1.9E-04	1.9E-01	9.4E-02	0.0	
DCX-200	2.2E 00	1.5E 00	3.2E 00	0.0	0.0	0.0		1.8E-01	2.7E-02	2.6E 00	0.0	0.0	0.0	
B757	9.9E-01	6.7E-01	2.0E 00	0.0	0.0	0.0		1.9E-02	6.5E-03	3.4E-01	0.0	0.0	0.0	
B767-200	1.4E 00	1.1E 00	2.7E 00	0.0	0.0	0.0		3.4E-02	1.5E-02	1.2E 00	0.0	0.0	0.0	
A30084	2.3E 00	1.7E 00	3.4E 00	0.0	0.0	0.0		5.0E-01	8.8E-02	1.5E 01	0.0	0.0	0.0	
CONCORDE	2.6E 00	1.0E 00	2.5E 00	0.0	0.0	0.0		3.5E 00	2.6E-02	2.7E 00	0.0	0.0	0.0	
				1.3E 03	2.4E 02	0.0	1.5E 03				6.3E 02	1.1E 02	0.0	7.4E 02

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

SUMMARY OF AIRCRAFT FORECAST, FUNCTIONAL LIMITS AND THICKNESS ANALYSIS

EQUIVALENT AIRCRAFT OPERATION: B727-200 WEIGHT: 170000. LBS

PAVEMENT MODEL: CODE LAYER THICKNESS EVALUE POISSON UNIT-PRICE

LCF	ASTOP	3.0	200000.	0.23	1.15
	LCFA	6.0	1100000.	0.17	0.60
	LCFB	6.0	600000.	0.19	0.52
	LCFC	****	400000.	0.20	0.48
	SUB	INFI	****	0.34	0.35

FOR ESUB NORM AND FAM DEFINED

FACILITY	STATION FROM-TO	LOC	ESUB NORM	AANS	AAND	LIMIT DEF/WZ	LIMIT STRESS LCFC	DESIGN SERVICE YEARS	THICKNESS OF LCFC LAYER FAM NORM	FAM/2 NORM	FAM*2 NORM	FAM WET	FAM/2 WET	FAM*2 WET
RW 15-33	0.- 3.	KEEL	34283.	669.	1323.	0.0861	135.0	5	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	3.- 30.	KEEL	14158.	669.	1323.	0.1340	135.0	5	1.0	1.0	1.7	3.9	3.3	4.5
RW 15-33	30.- 53.	KEEL	14158.	738.	1521.	0.1327	134.3	5	1.1	1.0	1.8	4.0	3.4	4.5
RW 15-33	53.- 69.	KEEL	14158.	299.	586.	0.1423	140.9	5	1.0	1.0	1.0	3.2	2.6	3.8
RW 15-33	69.- 77.	KEEL	13980.	299.	586.	0.1432	140.9	5	1.0	1.0	1.0	3.3	2.7	3.9
RW 15-33	77.- 78.	KEEL	30628.	299.	586.	0.0968	140.9	5	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	0.- 3.	SIDE	34283.	9.	13.	0.2347	210.5	5	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	3.- 30.	SIDE	14158.	9.	13.	0.3652	210.5	5	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	30.- 53.	SIDE	14158.	10.	15.	0.3558	209.5	5	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	53.- 69.	SIDE	14158.	4.	6.	0.3868	217.3	5	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	69.- 77.	SIDE	13980.	4.	6.	0.3893	217.3	5	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	77.- 78.	SIDE	30628.	4.	6.	0.2630	217.3	5	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	0.- 3.	KEEL	34283.	5762.	11625.	0.0755	119.3	20	1.0	1.0	1.0	1.0	1.0	1.6
RW 15-33	3.- 30.	KEEL	14158.	5762.	11625.	0.1174	119.3	20	3.3	2.6	4.0	5.7	5.1	6.4
RW 15-33	30.- 53.	KEEL	14158.	6505.	14025.	0.1163	118.4	20	3.4	2.7	4.1	5.8	5.2	6.5
RW 15-33	53.- 69.	KEEL	14158.	2477.	4555.	0.1238	125.4	20	2.4	1.6	3.1	5.0	4.4	5.6
RW 15-33	69.- 77.	KEEL	13980.	2477.	4555.	0.1246	125.4	20	2.5	1.7	3.2	5.0	4.4	5.6
RW 15-33	77.- 78.	KEEL	30628.	2477.	4555.	0.0842	125.4	20	1.0	1.0	1.0	1.0	1.0	1.4
RW 15-33	0.- 3.	SIDE	34283.	81.	116.	0.1730	190.2	20	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	3.- 30.	SIDE	14158.	81.	116.	0.2692	190.2	20	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	30.- 53.	SIDE	14158.	93.	140.	0.2640	189.0	20	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	53.- 69.	SIDE	14158.	39.	46.	0.3004	197.1	20	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	69.- 77.	SIDE	13980.	39.	46.	0.3023	197.1	20	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	77.- 78.	SIDE	30628.	39.	46.	0.2042	197.1	20	1.0	1.0	1.0	1.0	1.0	1.0

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

SUMMARY OF AIRCRAFT FORECAST, FUNCTIONAL LIMITS AND THICKNESS ANALYSIS

EQUIVALENT AIRCRAFT OPERATION: B727-200 WEIGHT: 170000. LBS

PAVEMENT MODEL:

CODE	LAYER	THICKNESS	EVALUE	POISSON	UNIT-PRICE
AC	ASTOP	2.0	200000.	0.23	1.15
	ASBS	****	150000.	0.24	1.03
	AGBS	6.0	40000.	0.28	0.40
	SUB	INFI	****	0.34	0.35

FOR ESUB NORM AND FAM DEFINED

FACILITY	STATION FROM-TO	LOC	ESUB NORM	AANS	AAND	LIMIT DEF/WZ	LIMIT STRESS ASBS	DESIGN SERVICE YEARS	THICKNESS OF ASBS LAYER FAM NORM	FAM/2 NORM	FAM*2 NORM	FAM WET	FAM/2 WET	FAM*2 WET
RW 15-33	0.- 3.	KEEL	34283.	867.	1126.	0.0733	133.0	5	1.2	1.0	2.0	3.0	2.1	3.8
RW 15-33	3.- 30.	KEEL	14158.	867.	1126.	0.1140	133.0	5	4.0	3.1	5.0	6.7	6.0	7.7
RW 15-33	30.- 53.	KEEL	14158.	969.	1287.	0.1129	132.3	5	4.2	3.3	5.2	6.8	6.1	7.9
RW 15-33	53.- 69.	KEEL	14158.	414.	510.	0.1210	138.0	5	3.1	2.3	3.9	6.0	5.4	6.7
RW 15-33	69.- 77.	KEEL	13980.	414.	510.	0.1218	138.0	5	3.2	2.4	3.9	6.1	5.4	6.8
RW 15-33	77.- 78.	KEEL	30628.	414.	510.	0.0823	138.0	5	1.0	1.0	1.5	2.3	1.3	3.1
RW 15-33	0.- 3.	SIDE	34283.	12.	11.	0.1868	204.5	5	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	3.- 30.	SIDE	14158.	12.	11.	0.2907	204.5	5	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	30.- 53.	SIDE	14158.	13.	13.	0.2830	203.6	5	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	53.- 69.	SIDE	14158.	6.	5.	0.2981	210.2	5	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	69.- 77.	SIDE	13980.	6.	5.	0.3000	210.2	5	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	77.- 78.	SIDE	30628.	6.	5.	0.2027	210.2	5	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	0.- 3.	KEEL	34283.	7917.	9423.	0.0642	118.3	20	3.4	2.8	4.2	5.5	4.7	6.4
RW 15-33	3.- 30.	KEEL	14158.	7917.	9423.	0.0999	118.3	20	6.9	5.9	7.9	9.9	8.8	10.9
RW 15-33	30.- 53.	KEEL	14158.	9097.	11255.	0.0990	117.4	20	7.2	6.1	8.1	10.2	9.1	11.2
RW 15-33	53.- 69.	KEEL	14158.	3748.	3791.	0.1053	123.3	20	5.6	4.8	6.6	8.4	7.5	9.6
RW 15-33	69.- 77.	KEEL	13980.	3748.	3791.	0.1060	123.3	20	5.7	4.8	6.7	8.5	7.6	9.6
RW 15-33	77.- 78.	KEEL	30628.	3748.	3791.	0.0716	123.3	20	3.0	2.3	3.7	4.8	3.9	5.6
RW 15-33	0.- 3.	SIDE	34283.	109.	94.	0.1363	185.8	20	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	3.- 30.	SIDE	14158.	109.	94.	0.2122	185.8	20	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	30.- 53.	SIDE	14158.	125.	113.	0.2081	184.6	20	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	53.- 69.	SIDE	14158.	56.	38.	0.2373	191.4	20	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	69.- 77.	SIDE	13980.	56.	38.	0.2388	191.4	20	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	77.- 78.	SIDE	30628.	56.	38.	0.1613	191.4	20	1.0	1.0	1.0	1.0	1.0	1.0
RW 1-19	16.- 52.	KEEL	17732.	149.	217.	0.1164	144.7	5	1.1	1.0	2.1	3.9	3.2	4.5
RW 1-19	16.- 52.	SIDE	17732.	2.	2.	0.2664	219.2	5	1.0	1.0	1.0	1.0	1.0	1.0

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

SUMMARY OF AIRCRAFT FORECAST, FUNCTIONAL LIMITS AND THICKNESS ANALYSIS

EQUIVALENT AIRCRAFT OPERATION: B727-200 WEIGHT: 170000. LBS

PAVEMENT MODEL: CODE LAYER THICKNESS EVALUE PCISSON UNIT-PRICE

CC	PCC	****	4000000.	0.12	1.23
	CTB	6.0	200000.	0.23	0.60
	SSBS	8.0	20000.	0.31	0.33
	SUB	INFI	++++	0.34	0.35

FOR ESUB NORM AND FAM DEFINED

FACILITY	STATION FROM-TO	LOC	ESUB NORM	AANS	AAND	LIMIT DEF/WZ	LIMIT STRESS PCC	DESIGN SERVICE YEARS	THICKNESS OF PCC LAYER FAM NORM	FAM/2 NORM	FAM*2 NORM	FAM WET	FAM/2 WET	FAM*2 WET
RW 15-33	0.- 3.	KEEL	34283.	561.	1328.	0.0996	497.9	5	7.4	7.1	7.6	8.2	7.9	8.5
RW 15-33	3.- 30.	KEEL	14158.	561.	1328.	0.1550	497.9	5	8.7	8.5	9.0	9.6	9.3	9.9
RW 15-33	30.- 53.	KEEL	14158.	606.	1531.	0.1535	496.2	5	8.8	8.5	9.0	9.6	9.3	9.9
RW 15-33	53.- 69.	KEEL	14158.	239.	577.	0.1649	517.5	5	8.4	8.1	8.7	9.2	8.9	9.5
RW 15-33	69.- 77.	KEEL	13980.	239.	577.	0.1659	517.5	5	8.4	8.1	8.7	9.2	9.0	9.5
RW 15-33	77.- 78.	KEEL	30628.	239.	577.	0.1121	517.5	5	7.2	6.9	7.5	8.0	7.7	8.3
RW 15-33	0.- 3.	SIDE	34283.	7.	13.	0.2781	755.3	5	4.0	4.0	4.0	4.1	4.0	4.4
RW 15-33	3.- 30.	SIDE	14158.	7.	13.	0.4327	755.3	5	4.8	4.5	5.1	5.8	5.6	6.1
RW 15-33	30.- 53.	SIDE	14158.	8.	15.	0.4213	752.2	5	4.9	4.5	5.2	5.9	5.6	6.1
RW 15-33	53.- 69.	SIDE	14158.	3.	6.	0.4586	778.0	5	4.5	4.1	4.8	5.5	5.3	5.8
RW 15-33	69.- 77.	SIDE	13980.	3.	6.	0.4615	778.0	5	4.5	4.1	4.8	5.6	5.3	5.8
RW 15-33	77.- 78.	SIDE	30628.	3.	6.	0.3118	778.0	5	4.0	4.0	4.0	4.0	4.0	4.3
RW 15-33	0.- 3.	KEEL	34283.	4670.	11669.	0.0873	449.4	20	8.3	7.9	8.6	9.1	8.8	9.4
RW 15-33	3.- 30.	KEEL	14158.	4670.	11669.	0.1359	449.4	20	9.7	9.3	10.0	10.5	10.2	10.8
RW 15-33	30.- 53.	KEEL	14156.	5119.	14164.	0.1345	447.3	20	9.7	9.4	10.0	10.5	10.2	10.9
RW 15-33	53.- 69.	KEEL	14158.	1851.	4394.	0.1436	470.6	20	9.2	8.9	9.5	10.1	9.8	10.4
RW 15-33	69.- 77.	KEEL	13980.	1851.	4394.	0.1445	470.6	20	9.3	9.0	9.6	10.1	9.8	10.4
RW 15-33	77.- 78.	KEEL	30628.	1851.	4394.	0.0976	470.6	20	8.0	7.7	8.3	8.8	8.5	9.1
RW 15-33	0.- 3.	SIDE	34283.	66.	117.	0.2050	692.3	20	4.2	4.0	4.6	5.1	4.8	5.4
RW 15-33	3.- 30.	SIDE	14158.	66.	117.	0.3190	692.3	20	5.7	5.5	6.0	6.7	6.4	6.9
RW 15-33	30.- 53.	SIDE	14158.	75.	142.	0.3127	688.4	20	5.8	5.5	6.1	6.7	6.4	7.0
RW 15-33	53.- 69.	SIDE	14158.	29.	44.	0.3578	715.7	20	5.4	5.1	5.7	6.3	6.1	6.6
RW 15-33	69.- 77.	SIDE	13980.	29.	44.	0.3600	715.7	20	5.4	5.2	5.7	6.4	6.1	6.6
RW 15-33	77.- 78.	SIDE	30628.	29.	44.	0.2432	715.7	20	4.0	4.0	4.4	5.0	4.6	5.3
RW 1-19	16.- 52.	KEEL	17732.	91.	232.	0.1592	539.6	5	7.7	7.4	7.9	8.5	8.2	8.8
RW 1-19	16.- 52.	SIDE	17732.	1.	2.	0.4098	806.8	5	4.0	4.0	4.0	4.7	4.3	5.0

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

SUMMARY OF AIRCRAFT FORECAST, FUNCTIONAL LIMITS AND THICKNESS ANALYSIS

EQUIVALENT AIRCRAFT OPERATION: B727-200 WEIGHT: 170000. LBS

PAVEMENT MODEL: CODE LAYER THICKNESS EVALUE POISSON UNIT-PRICE

CCL	PCC	8.0	4000000.	0.12	1.23
	RLC	****	1500000.	0.16	0.84
	SSBS	6.0	20000.	0.31	0.33
	SUB	INFI	****	0.34	0.35

FOR ESUB NORM AND FAM DEFINED

FACILITY	STATION FROM-TO	LOC	ESUB NORM	AANS	AAND	LIMIT DEF/WZ	LIMIT STRESS RLC	DESIGN SERVICE YEARS	THICKNESS OF RLC LAYER FAM NORM	FAM/2 NORM	FAM*2 NORM	FAM WET	FAM/2 WET	FAM*2 WET
RW 15-33	0.- 3.	KEEL	34283.	511.	1309.	0.0969	297.3	5	4.0	4.0	4.0	4.0	4.0	4.0
RW 15-33	3.- 30.	KEEL	14158.	511.	1309.	0.1507	297.3	5	4.0	4.0	4.0	4.0	4.0	4.0
RW 15-33	30.- 53.	KEEL	14158.	537.	1509.	0.1493	296.6	5	4.0	4.0	4.0	4.0	4.0	4.0
RW 15-33	53.- 69.	KEEL	14158.	213.	569.	0.1603	309.6	5	4.0	4.0	4.0	4.0	4.0	4.0
RW 15-33	69.- 77.	KEEL	13980.	213.	569.	0.1613	309.6	5	4.0	4.0	4.0	4.0	4.0	4.0
RW 15-33	77.- 78.	KEEL	30628.	213.	569.	0.1090	309.6	5	4.0	4.0	4.0	4.0	4.0	4.0
RW 15-33	0.- 3.	SIDE	34283.	7.	13.	0.2643	453.2	5	4.0	4.0	4.0	4.0	4.0	4.0
RW 15-33	3.- 30.	SIDE	14158.	7.	13.	0.4112	453.2	5	4.0	4.0	4.0	4.0	4.0	4.0
RW 15-33	30.- 53.	SIDE	14158.	7.	15.	0.4003	451.4	5	4.0	4.0	4.0	4.0	4.0	4.0
RW 15-33	53.- 69.	SIDE	14158.	3.	6.	0.4246	467.5	5	4.0	4.0	4.0	4.0	4.0	4.0
RW 15-33	69.- 77.	SIDE	13980.	3.	6.	0.4374	467.5	5	4.0	4.0	4.0	4.0	4.0	4.0
RW 15-33	77.- 78.	SIDE	30628.	3.	6.	0.2955	467.5	5	4.0	4.0	4.0	4.0	4.0	4.0
RW 15-33	0.- 3.	KEEL	34283.	4202.	11445.	0.0849	267.8	20	4.0	4.0	4.0	4.0	4.0	4.0
RW 15-33	3.- 30.	KEEL	14158.	4202.	11445.	0.1321	267.8	20	4.0	4.0	4.0	4.9	4.4	5.3
RW 15-33	30.- 53.	KEEL	14158.	4439.	13881.	0.1307	267.0	20	4.0	4.0	4.0	4.9	4.4	5.3
RW 15-33	53.- 69.	KEEL	14158.	1592.	4321.	0.1396	281.4	20	4.0	4.0	4.0	4.2	4.0	4.7
RW 15-33	69.- 77.	KEEL	13980.	1592.	4321.	0.1404	281.4	20	4.0	4.0	4.0	4.3	4.0	4.7
RW 15-33	77.- 78.	KEEL	30628.	1592.	4321.	0.0949	281.4	20	4.0	4.0	4.0	4.0	4.0	4.0
RW 15-33	0.- 3.	SIDE	34283.	58.	114.	0.1947	414.8	20	4.0	4.0	4.0	4.0	4.0	4.0
RW 15-33	3.- 30.	SIDE	14158.	58.	114.	0.3029	414.8	20	4.0	4.0	4.0	4.0	4.0	4.0
RW 15-33	30.- 53.	SIDE	14158.	66.	139.	0.2969	412.6	20	4.0	4.0	4.0	4.0	4.0	4.0
RW 15-33	53.- 69.	SIDE	14158.	25.	43.	0.3398	429.8	20	4.0	4.0	4.0	4.0	4.0	4.0
RW 15-33	69.- 77.	SIDE	13980.	25.	43.	0.3420	429.8	20	4.0	4.0	4.0	4.0	4.0	4.0
RW 15-33	77.- 78.	SIDE	30628.	25.	43.	0.2311	429.8	20	4.0	4.0	4.0	4.0	4.0	4.0
RW 1-19	16.- 52.	KEEL	17732.	80.	230.	0.1547	323.4	5	4.0	4.0	4.0	4.0	4.0	4.0
RW 1-19	16.- 52.	SIDE	17732.	1.	2.	0.3884	484.9	5	4.0	4.0	4.0	4.0	4.0	4.0

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

SUMMARY OF AIRCRAFT FORECAST, FUNCTIONAL LIMITS AND THICKNESS ANALYSIS

EQUIVALENT AIRCRAFT OPERATION: B727-200 WEIGHT: 170000. LBS

PAVEMENT MODEL: CODE LAYER THICKNESS EVALUE POISSON UNIT-PRICE

LC/PAV	ASTOP	3.0	200000.	0.23	1.15
	LCFA	****	1100000.	0.17	0.60
	PAV	INFI	****	0.27	0.18

FOR EPAV NORM AND FAM DEFINED

FACILITY	STATION FROM-TO	LOC	EPAV NORM	AANS	AAND	LIMIT DEF/WZ	LIMIT STRESS LCFA	DESIGN SERVICE YEARS	THICKNESS OF LCFA LAYER FAM NORM	FAM/2 NORM	FAM*2 NORM	FAM WET	FAM/2 WET	FAM*2 WET
RW 15-33	0.- 3.	KEEL	179545.	887.	1351.	0.0302	220.4	5	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	3.- 30.	KEEL	34885.	887.	1351.	0.0686	220.4	5	10.9	10.5	11.3	12.3	11.9	12.7
RW 15-33	30.- 53.	KEEL	34885.	992.	1529.	0.0680	219.1	5	11.0	10.6	11.4	12.4	12.0	12.8
RW 15-33	53.- 69.	KEEL	34885.	425.	654.	0.0724	229.3	5	10.5	10.1	10.9	11.9	11.5	12.3
RW 15-33	69.- 77.	KEEL	27745.	425.	654.	0.0811	229.3	5	11.4	11.1	11.8	12.7	12.4	13.1
RW 15-33	77.- 78.	KEEL	165589.	425.	654.	0.0232	229.3	5	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	0.- 3.	SIDE	179545.	12.	14.	0.0823	344.9	5	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	3.- 30.	SIDE	34885.	12.	14.	0.1867	344.9	5	6.6	6.4	6.9	8.0	7.7	8.2
RW 15-33	30.- 53.	SIDE	34885.	13.	15.	0.1824	343.2	5	6.7	6.4	6.9	8.0	7.7	8.3
RW 15-33	53.- 69.	SIDE	34885.	6.	7.	0.1985	355.2	5	6.4	6.1	6.6	7.7	7.4	8.0
RW 15-33	69.- 77.	SIDE	27745.	6.	7.	0.2226	355.2	5	7.3	7.0	7.6	8.4	8.2	8.7
RW 15-33	77.- 78.	SIDE	165589.	6.	7.	0.0911	355.2	5	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	0.- 3.	KEEL	179545.	8209.	12282.	0.0265	193.5	20	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	3.- 30.	KEEL	34885.	8209.	12282.	0.0600	193.5	20	12.3	11.8	12.8	13.7	13.2	14.2
RW 15-33	30.- 53.	KEEL	34885.	9449.	14452.	0.0595	191.8	20	12.4	11.9	12.9	13.8	13.3	14.3
RW 15-33	53.- 69.	KEEL	34885.	3913.	5565.	0.0627	202.5	20	11.8	11.4	12.3	13.2	12.8	13.7
RW 15-33	69.- 77.	KEEL	27745.	3913.	5565.	0.0703	202.5	20	12.8	12.4	13.3	14.1	13.6	14.5
RW 15-33	77.- 78.	KEEL	165589.	3913.	5565.	0.0289	202.5	20	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	0.- 3.	SIDE	179545.	112.	123.	0.0605	310.6	20	1.0	1.0	1.0	1.0	1.0	1.0
RW 15-33	3.- 30.	SIDE	34885.	112.	123.	0.1373	310.6	20	7.6	7.3	7.9	8.9	8.6	9.2
RW 15-33	30.- 53.	SIDE	34885.	129.	145.	0.1351	308.4	20	7.6	7.3	8.0	9.0	8.6	9.3
RW 15-33	53.- 69.	SIDE	34885.	58.	56.	0.1502	320.7	20	7.3	7.0	7.6	8.6	8.3	8.9
RW 15-33	69.- 77.	SIDE	27745.	56.	56.	0.1685	320.7	20	8.2	7.9	8.5	9.4	9.1	9.7
RW 15-33	77.- 78.	SIDE	165589.	58.	56.	0.0690	320.7	20	1.0	1.0	1.0	1.0	1.0	1.0
RW 1-19	16.- 52.	KEEL	32267.	153.	261.	0.0812	241.7	5	10.3	9.9	10.6	11.7	11.3	12.1
RW 1-19	16.- 52.	SIDE	32267.	2.	3.	0.2064	371.6	5	6.3	6.1	6.5	7.6	7.4	7.9

BURLINGTON INTERNATICNAL AIRPCRT - FAA NEW ENGLAND REGION

SUMMARY CF AIRCRAFT FORECAST, FUNCTIONAL LIMITS AND THICKNESS ANALYSIS

EQUIVALENT AIRCRAFT OPERATION: B727-200 WEIGHT: 170000. LBS

PAVEMENT MODEL: CODE LAYER THICKNESS EVALUE POISSON UNIT-PRICE

CC/PAV	PCCR	****	5000000.	0.11	1.58
	ASTCP	1.0	200000.	0.23	1.15
	PAV	INFI	****	0.27	0.18

FOR EPAV NORM AND FAM DEFINED

FACILITY	STATION FROM-TO	LOC	EPAV NORM	AANS	AAND	LIMIT DEF/WZ	LIMIT STRESS PCCR	DESIGN SERVICE YEARS	THICKNESS OF PCCR LAYER FAM NORM	FAM/2 NORM	FAM*2 NORM	FAM WET	FAM/2 WET	FAM*2 WET
RW 15-33	0.- 3.	KEEL	179545.	793.	966.	0.0370	551.0	5	4.0	4.0	4.0	4.6	4.3	4.8
RW 15-33	3.- 30.	KEEL	34885.	703.	966.	0.0838	551.0	5	8.3	8.1	8.6	9.0	8.8	9.3
RW 15-33	30.- 53.	KEEL	34885.	782.	1105.	0.0830	548.2	5	8.3	8.1	8.6	9.1	8.8	9.3
RW 15-33	53.- 69.	KEEL	34885.	319.	439.	0.0893	571.2	5	8.0	7.8	8.3	8.8	8.6	9.0
RW 15-33	69.- 77.	KEEL	27745.	319.	439.	0.1001	571.2	5	8.6	8.3	8.8	9.2	9.0	9.5
RW 15-33	77.- 78.	KEEL	165589.	319.	439.	0.0410	571.2	5	4.0	4.0	4.0	4.6	4.3	4.8
RW 15-33	0.- 3.	SIDE	179545.	9.	10.	0.1069	837.3	5	4.0	4.0	4.0	4.0	4.0	4.0
RW 15-33	3.- 30.	SIDE	34885.	9.	10.	0.2426	837.3	5	5.6	5.4	5.7	6.3	6.1	6.4
RW 15-33	30.- 53.	SIDE	34885.	10.	11.	0.2375	833.7	5	5.6	5.4	5.7	6.3	6.1	6.5
RW 15-33	53.- 69.	SIDE	34885.	5.	4.	0.2426	860.8	5	5.4	5.3	5.6	6.1	5.9	6.3
RW 15-33	69.- 77.	SIDE	27745.	5.	4.	0.2720	860.8	5	5.9	5.7	6.0	6.5	6.4	6.7
RW 15-33	77.- 78.	SIDE	165589.	5.	4.	0.1113	860.8	5	4.0	4.0	4.0	4.0	4.0	4.0
RW 15-33	0.- 3.	KEEL	179545.	6229.	7637.	0.0324	495.1	20	4.0	4.0	4.2	5.4	5.1	5.7
RW 15-33	3.- 30.	KEEL	34885.	6229.	7637.	0.0735	495.1	20	9.1	8.8	9.4	9.8	9.6	10.1
RW 15-33	30.- 53.	KEEL	34885.	7130.	9133.	0.0728	491.7	20	9.2	8.9	9.5	9.9	9.6	10.2
RW 15-33	53.- 69.	KEEL	34885.	2752.	2937.	0.0778	516.0	20	8.8	8.5	9.0	9.5	9.3	9.8
RW 15-33	69.- 77.	KEEL	27745.	2752.	2937.	0.0872	516.0	20	9.3	9.0	9.6	10.0	9.7	10.3
RW 15-33	77.- 78.	KEEL	165589.	2752.	2937.	0.0357	516.0	20	4.0	4.0	4.2	5.3	5.1	5.6
RW 15-33	0.- 3.	SIDE	179545.	87.	76.	0.0779	764.9	20	4.0	4.0	4.0	4.0	4.0	4.0
RW 15-33	3.- 30.	SIDE	34885.	87.	76.	0.1768	764.9	20	6.1	5.9	6.3	6.8	6.6	7.0
RW 15-33	30.- 53.	SIDE	34885.	100.	91.	0.1732	760.3	20	6.1	5.9	6.3	6.8	6.7	7.0
RW 15-33	53.- 69.	SIDE	34885.	42.	29.	0.2002	788.4	20	5.9	5.8	6.1	6.6	6.5	6.8
RW 15-33	69.- 77.	SIDE	27745.	42.	29.	0.2245	788.4	20	6.4	6.2	6.6	7.0	6.9	7.2
RW 15-33	77.- 78.	SIDE	165589.	42.	29.	0.0919	788.4	20	4.0	4.0	4.0	4.0	4.0	4.0
RW 1-19	16.- 52.	KEEL	32267.	119.	194.	0.0996	596.4	5	7.9	7.7	8.1	8.7	8.5	8.9
RW 1-19	16.- 52.	SIDE	32267.	2.	2.	0.2522	894.2	5	5.3	5.2	5.5	6.0	5.9	6.2

BURLINGTON INTERNATIONAL AIRPORT -- FAA NEW ENGLAND REGION

SUMMARY OF AIRCRAFT FORECAST, FUNCTIONAL LIMITS AND THICKNESS ANALYSIS

EQUIVALENT AIRCRAFT OPERATION: B727-200 WEIGHT: 170000. LBS

PAVEMENT MODEL: CODE LAYER THICKNESS EVALUE POISSON UNIT-PRICE

AC/PAV	ASTOP	1.0	200000.	0.23	1.15
	ASBS	****	150000.	0.24	1.03
	PFLPAV				0.18

FOR ESUB NORM AND FAM DEFINED

FACILITY	STATION FROM-TO	LOC	ESUB NORM	AANS	AAND	LIMIT DEF/WZ	LIMIT STRESS	DESIGN SERVICE YEARS	THICKNESS OF ASBS LAYER FAM NORM	FAM/2 NORM	FAM*2 NORM	FAM WET	FAM/2 WET	FAM*2 WET	PFLPAV
RW 15-33	0.- 3.	KEEL	34283.	543.	1647.	0.0949	431.9	5	1.0	1.0	1.0	1.0	1.0	1.0	CC7
RW 15-33	3.- 30.	KEEL	14158.	1003.	1133.	0.1138	127.6	5	1.0	1.0	1.0	1.3	1.0	2.5	AC2
RW 15-33	30.- 53.	KEEL	14158.	1120.	1294.	0.1127	126.9	5	1.0	1.0	1.0	1.6	1.0	2.7	AC2
RW 15-33	53.- 69.	KEEL	14158.	494.	514.	0.1208	132.1	5	1.0	1.0	1.0	1.0	1.0	1.2	AC2
RW 15-33	69.- 77.	KEEL	13980.	494.	514.	0.1215	132.1	5	1.0	1.0	1.6	2.9	1.8	4.2	AC1
RW 15-33	77.- 78.	KEEL	30628.	231.	768.	0.1061	448.9	5	1.0	1.0	1.0	1.0	1.0	1.0	CC7
RW 15-33	0.- 3.	SIDE	34283.	7.	16.	0.2455	654.8	5	1.0	1.0	1.0	1.0	1.0	1.0	CC7
RW 15-33	3.- 30.	SIDE	14158.	14.	11.	0.2899	196.3	5	1.0	1.0	1.0	1.0	1.0	1.0	AC2
RW 15-33	30.- 53.	SIDE	14158.	15.	13.	0.2823	195.4	5	1.0	1.0	1.0	1.0	1.0	1.0	AC2
RW 15-33	53.- 69.	SIDE	14158.	7.	5.	0.2976	201.6	5	1.0	1.0	1.0	1.0	1.0	1.0	AC2
RW 15-33	69.- 77.	SIDE	13980.	7.	5.	0.2995	201.6	5	1.0	1.0	1.0	1.0	1.0	1.0	AC1
RW 15-33	77.- 78.	SIDE	30628.	3.	8.	0.2865	674.6	5	1.0	1.0	1.0	1.0	1.0	1.0	CC7
RW 15-33	0.- 3.	KEEL	34283.	4515.	16052.	0.0830	389.9	20	1.0	1.0	1.0	1.0	1.0	1.0	CC7
RW 15-33	3.- 30.	KEEL	14158.	9266.	9498.	0.0997	113.3	20	1.7	1.0	2.7	4.8	3.7	5.8	AC2
RW 15-33	30.- 53.	KEEL	14158.	10650.	11342.	0.0988	112.4	20	2.0	1.0	2.9	5.0	4.0	6.1	AC2
RW 15-33	53.- 69.	KEEL	14158.	4563.	3835.	0.1050	117.9	20	1.0	1.0	1.4	3.3	2.2	4.4	AC2
RW 15-33	69.- 77.	KEEL	13980.	4563.	3835.	0.1057	117.9	20	3.4	2.5	4.4	6.3	5.1	7.4	AC1
RW 15-33	77.- 78.	KEEL	30628.	1772.	6996.	0.0919	408.4	20	1.0	1.0	1.0	1.0	1.0	1.0	CC7
RW 15-33	0.- 3.	SIDE	34283.	63.	161.	0.1823	600.4	20	1.0	1.0	1.0	1.0	1.0	1.0	CC7
RW 15-33	3.- 30.	SIDE	14158.	126.	95.	0.2117	178.3	20	1.0	1.0	1.0	1.0	1.0	1.0	AC2
RW 15-33	30.- 53.	SIDE	14158.	145.	113.	0.2076	177.2	20	1.0	1.0	1.0	1.0	1.0	1.0	AC2
RW 15-33	53.- 69.	SIDE	14158.	67.	38.	0.2365	183.5	20	1.0	1.0	1.0	1.0	1.0	1.0	AC2
RW 15-33	69.- 77.	SIDE	13980.	67.	38.	0.2380	183.5	20	1.0	1.0	1.0	1.0	1.0	1.0	AC1
RW 15-33	77.- 78.	SIDE	30628.	28.	70.	0.2109	620.9	20	1.0	1.0	1.0	1.0	1.0	1.0	CC7
RW 1-19	16.- 52.	KEEL	17732.	174.	218.	0.1162	138.9	5	1.0	1.0	1.0	1.0	1.0	1.8	AC1
RW 1-19	16.- 52.	SIDE	17732.	2.	2.	0.2660	210.5	5	1.0	1.0	1.0	1.0	1.0	1.0	AC1

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NONDESTRUCTIVE EVALUATION OF AIRPORT PAVEMENTS. VOLUME II. OPER--ETC(U)
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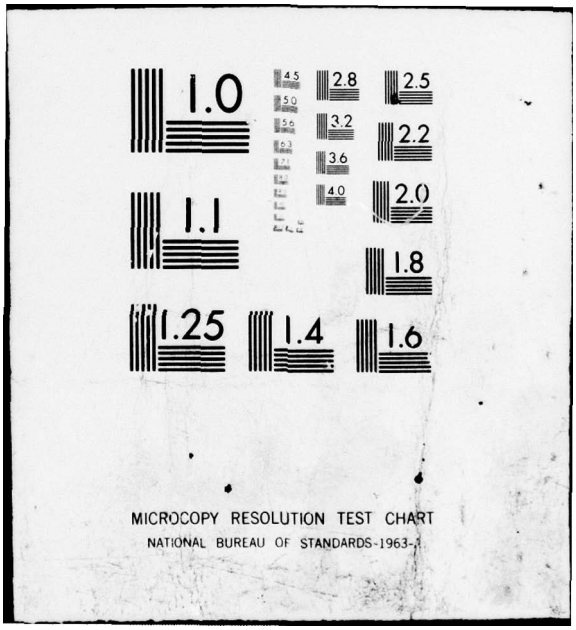
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BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

LISTING OF PAVEMENT DESIGN AND COST ANALYSIS

EQUIVALENT AIRCRAFT OPERATION: B727-200 WEIGHT: 170000. LBS

PAVEMENT MODEL: CODE LAYER THICKNESS EVALUE POISSON UNIT-PRICE

LCF	ASTOP	3.0	200000.	0.23	1.15
	LCFA	6.0	1100000.	0.17	0.60
	LCFB	6.0	600000.	0.19	0.52
	LCFC	****	400000.	0.20	0.48
	SUB	INFI	****	0.34	0.35

FACILITY	STATION FROM-TO	LOC	DI	VEL	ESUB NORM ****	AIRPORT NAVIGATION SYSTEM	FORECAST AIRCRAFT MOVEMENT	DESIGN SERVICE YEARS	FUNCTION GOVERNED	AMC	ICC	PCV	THICKNESS ****
RW 15-33	0.- 3.	KEEL	0.12	145.	34283.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.06	10.96	11.61	1.0
RW 15-33	3.- 30.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.06	10.96	11.61	1.0
RW 15-33	30.- 53.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.06	11.01	11.65	1.1
RW 15-33	53.- 69.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.05	10.96	11.56	1.0
RW 15-33	69.- 77.	KEEL	0.12	145.	13980.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.05	10.96	11.56	1.0
RW 15-33	77.- 78.	KEEL	0.12	145.	30628.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.05	10.96	11.56	1.0
RW 15-33	0.- 3.	SIDE	0.18	145.	34283.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.04	10.96	11.27	1.0
RW 15-33	3.- 30.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.04	10.96	11.27	1.0
RW 15-33	30.- 53.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.04	10.96	11.29	1.0
RW 15-33	53.- 69.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.03	10.96	11.09	1.0
RW 15-33	69.- 77.	SIDE	0.18	145.	13980.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.03	10.96	11.09	1.0
RW 15-33	77.- 78.	SIDE	0.18	145.	30628.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.03	10.96	11.09	1.0
RW 15-33	0.- 3.	KEEL	0.12	145.	34283.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.06	10.96	11.70	1.0
RW 15-33	3.- 30.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.06	12.06	12.75	3.3
RW 15-33	30.- 53.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.06	12.12	12.81	3.4
RW 15-33	53.- 69.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.06	11.64	12.31	2.4
RW 15-33	69.- 77.	KEEL	0.12	145.	13980.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.06	11.68	12.35	2.5
RW 15-33	77.- 78.	KEEL	0.12	145.	30628.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.06	10.96	11.67	1.0
RW 15-33	0.- 3.	SIDE	0.18	145.	34283.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.06	10.96	11.62	1.0
RW 15-33	3.- 30.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.06	10.96	11.62	1.0
RW 15-33	30.- 53.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.06	10.96	11.64	1.0
RW 15-33	53.- 69.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.05	10.96	11.52	1.0
RW 15-33	69.- 77.	SIDE	0.18	145.	13980.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.05	10.96	11.52	1.0
RW 15-33	77.- 78.	SIDE	0.18	145.	30628.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.05	10.96	11.52	1.0

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

LISTING OF PAVEMENT DESIGN AND COST ANALYSIS

EQUIVALENT AIRCRAFT OPERATION: B727-200 WEIGHT: 170000. LBS

PAVEMENT MODEL: CODE LAYER THICKNESS EVALUE POISSON UNIT-PRICE

AC	ASTOP	2.0	200000.	0.23	1.15
	ASBS	****	150000.	0.24	1.03
	AGBS	6.0	40000.	0.28	0.40
	SUB	INFI	****	0.34	0.35

FACILITY	STATION FROM-TO	LOC	DI	VEL	ESUB NORM ****	AIRPORT NAVIGATION SYSTEM	FORECAST AIRCRAFT MOVEMENT	DESIGN SERVICE YEARS	FUNCTION GOVERNED	AMC	ICC	PCV	THICKNESS ****
RW 15-33	0.- 3.	KEEL	0.12	145.	34283.	LIGHTS/ILS	FAMSUG	5	DEF/DI	0.08	6.23	7.59	1.2
RW 15-33	3.- 30.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	5	DEF/DI	0.08	9.16	10.42	4.0
RW 15-33	30.- 53.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	5	DEF/DI	0.08	9.37	10.63	4.2
RW 15-33	53.- 69.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.08	8.20	9.43	3.1
RW 15-33	69.- 77.	KEEL	0.12	145.	13980.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.08	8.30	9.53	3.2
RW 15-33	77.- 78.	KEEL	0.12	145.	30628.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.08	6.06	7.37	1.0
RW 15-33	0.- 3.	SIDE	0.18	145.	34283.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.06	6.06	6.96	1.0
RW 15-33	3.- 30.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.06	6.06	6.96	1.0
RW 15-33	30.- 53.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.06	6.06	6.99	1.0
RW 15-33	53.- 69.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.05	6.06	6.74	1.0
RW 15-33	69.- 77.	SIDE	0.18	145.	13980.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.05	6.06	6.74	1.0
RW 15-33	77.- 78.	SIDE	0.18	145.	30628.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.05	6.06	6.74	1.0
RW 15-33	0.- 3.	KEEL	0.12	145.	34283.	LIGHTS/ILS	FAMSUG	20	DEF/DI	0.09	8.52	9.94	3.4
RW 15-33	3.- 30.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	20	DEF/DI	0.09	12.14	13.42	6.9
RW 15-33	30.- 53.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	20	DEF/DI	0.09	12.40	13.68	7.2
RW 15-33	53.- 69.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	20	DEF/DI	0.09	10.83	12.12	5.6
RW 15-33	69.- 77.	KEEL	0.12	145.	13980.	LIGHTS/ILS	FAMSUG	20	DEF/DI	0.09	10.89	12.18	5.7
RW 15-33	77.- 78.	KEEL	0.12	145.	30628.	LIGHTS/ILS	FAMSUG	20	DEF/DI	0.09	8.09	9.49	3.0
RW 15-33	0.- 3.	SIDE	0.18	145.	34283.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.09	6.06	7.47	1.0
RW 15-33	3.- 30.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.09	6.06	7.47	1.0
RW 15-33	30.- 53.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.09	6.06	7.49	1.0
RW 15-33	53.- 69.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.08	6.06	7.34	1.0
RW 15-33	69.- 77.	SIDE	0.18	145.	13980.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.08	6.06	7.34	1.0
RW 15-33	77.- 78.	SIDE	0.18	145.	30628.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.08	6.06	7.34	1.0
RW 1-19	16.- 52.	KEEL	0.12	145.	17732.	LIGHTS/ILS	FAMSUG	5	DEF/DI	0.08	6.12	7.32	1.1
RW 1-19	16.- 52.	SIDE	0.18	145.	17732.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.02	6.06	6.27	1.0

BURLINGTON INTERNATICNAL AIRPORT - FAA NEW ENGLAND REGION

LISTING OF PAVEMENT DESIGN AND COST ANALYSIS

EQUIVALENT AIRCRAFT OPERATION: B727-200 WEIGHT: 170000. LBS

PAVEMENT MODEL: CODE LAYER THICKNESS EVALUE POISSON UNIT-PRICE

CC	PCC	****	4000000.	0.12	1.23
	CTB	6.0	200000.	0.23	0.60
	SSBS	8.0	20000.	0.31	0.33
	SUB	INFI	****	0.34	0.35

FACILITY	STATION FROM-TO	LOC	DI	VEL	ESUB NORM ****	AIRPORT NAVIGATION SYSTEM	FORECAST AIRCRAFT MOVEMENT	DESIGN SERVICE YEARS	FUNCTION GOVERNED	AMC	ICC	PCV	THICKNESS ****
RW 15-33	0.- 3.	KEEL	0.12	145.	34283.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.09	15.62	16.74	7.4
RW 15-33	3.- 30.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.09	17.31	18.37	8.7
RW 15-33	30.- 53.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.09	17.35	18.41	8.8
RW 15-33	53.- 69.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.09	16.89	17.88	8.4
RW 15-33	69.- 77.	KEEL	0.12	145.	13980.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.09	16.92	17.91	8.4
RW 15-33	77.- 78.	KEEL	0.12	145.	30628.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.09	15.42	16.46	7.2
RW 15-33	0.- 3.	SIDE	0.18	145.	34283.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.05	11.51	12.13	4.0
RW 15-33	3.- 30.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.05	12.54	13.12	4.8
RW 15-33	30.- 53.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.06	12.60	13.22	4.9
RW 15-33	53.- 69.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.04	12.07	12.34	4.5
RW 15-33	69.- 77.	SIDE	0.18	145.	13980.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.04	12.10	12.37	4.5
RW 15-33	77.- 78.	SIDE	0.18	145.	30628.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.04	11.51	11.80	4.0
RW 15-33	0.- 3.	KEEL	0.12	145.	34283.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.10	16.74	17.98	8.3
RW 15-33	3.- 30.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.10	18.45	19.62	9.7
RW 15-33	30.- 53.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.10	18.50	19.68	9.7
RW 15-33	53.- 69.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.09	17.93	19.07	9.2
RW 15-33	69.- 77.	KEEL	0.12	145.	13980.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.09	17.96	19.09	9.3
RW 15-33	77.- 78.	KEEL	0.12	145.	30628.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.09	16.44	17.63	8.0
RW 15-33	0.- 3.	SIDE	0.18	145.	34283.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.09	11.80	13.02	4.2
RW 15-33	3.- 30.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.09	13.65	14.80	5.7
RW 15-33	30.- 53.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.09	13.72	14.90	5.8
RW 15-33	53.- 69.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.08	13.25	14.23	5.4
RW 15-33	69.- 77.	SIDE	0.18	145.	13980.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.08	13.28	14.25	5.4
RW 15-33	77.- 78.	SIDE	0.18	145.	30628.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.08	11.56	12.59	4.0
RW 1-19	16.- 52.	KEEL	0.12	145.	17732.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.08	16.00	16.90	7.7
RW 1-19	16.- 52.	SIDE	0.18	145.	17732.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.01	11.51	11.25	4.0

BURLINGTON INTERNATICNAL AIRPORT - FAA NEW ENGLAND REGION

LISTING OF PAVEMENT DESIGN AND COST ANALYSIS

EQUIVALENT AIRCRAFT OPERATION: B727-200 WEIGHT: 170000. LBS

PAVEMENT MODEL: CODE LAYER THICKNESS EVALUE POISSON UNIT-PRICE

CCL	PCC	8.0	4000000.	0.12	1.23
	RLC	****	1500000.	0.16	0.84
	SSBS	6.0	20000.	0.31	0.33
	SUB	INFI	++++	0.34	0.35

FACILITY	STATION FROM-TO	LOC	DI	VEL	ESUB NCRM ++++	AIRPORT NAVIGATION SYSTEM	FORECAST AIRCRAFT MOVEMENT	DESIGN SERVICE YEARS	FUNCTION GOVERNED	AMC	ICC	PCV	THICKNESS ****
RW 15-33	0.- 3.	KEEL	0.12	145.	34283.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.07	15.52	16.35	4.0
RW 15-33	3.- 30.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.07	15.52	16.35	4.0
RW 15-33	30.- 53.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.07	15.52	16.36	4.0
RW 15-33	53.- 69.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.07	15.52	16.28	4.0
RW 15-33	69.- 77.	KEEL	0.12	145.	13980.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.07	15.52	16.28	4.0
RW 15-33	77.- 78.	KEEL	0.12	145.	30628.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.07	15.52	16.28	4.0
RW 15-33	0.- 3.	SIDE	0.18	145.	34283.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.04	15.52	15.79	4.0
RW 15-33	3.- 30.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.04	15.52	15.79	4.0
RW 15-33	30.- 53.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.05	15.52	15.82	4.0
RW 15-33	53.- 69.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.03	15.52	15.50	4.0
RW 15-33	69.- 77.	SIDE	0.18	145.	13980.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.03	15.52	15.50	4.0
RW 15-33	77.- 78.	SIDE	0.18	145.	30628.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.03	15.52	15.50	4.0
RW 15-33	0.- 3.	KEEL	0.12	145.	34283.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.08	15.52	16.49	4.0
RW 15-33	3.- 30.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.08	15.52	16.49	4.0
RW 15-33	30.- 53.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.08	15.52	16.49	4.0
RW 15-33	53.- 69.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.08	15.52	16.43	4.0
RW 15-33	69.- 77.	KEEL	0.12	145.	13980.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.08	15.52	16.43	4.0
RW 15-33	77.- 78.	KEEL	0.12	145.	30628.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.08	15.52	16.43	4.0
RW 15-33	0.- 3.	SIDE	0.18	145.	34283.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.07	15.52	16.31	4.0
RW 15-33	3.- 30.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.07	15.52	16.31	4.0
RW 15-33	30.- 53.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.07	15.52	16.33	4.0
RW 15-33	53.- 69.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.06	15.52	16.14	4.0
RW 15-33	69.- 77.	SIDE	0.18	145.	13980.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.06	15.52	16.14	4.0
RW 15-33	77.- 78.	SIDE	0.18	145.	30628.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.06	15.52	16.14	4.0
RW 1-19	16.- 52.	KEEL	0.12	145.	17732.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.06	15.52	16.17	4.0
RW 1-19	16.- 52.	SIDE	0.18	145.	17732.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.00	15.52	15.03	4.0

BURLINGTON INTERNATICNAL AIRPORT - FAA NEW ENGLAND REGION

LISTING OF PAVEMENT DESIGN AND COST ANALYSIS

EQUIVALENT AIRCRAFT OPERATION: B727-200 WEIGHT: 170000. LBS

PAVEMENT MODEL: CODE LAYER THICKNESS EVALUE POISSON UNIT-PRICE

LC/PAV	ASTOP	3.0	200000.	0.23	1.15
	LCFA	****	1100000.	0.17	0.60
	PAV	INFI	****	0.27	0.18

FACILITY	STATION FROM-TO	LOC	DI	VEL	EPAV NORM ****	AIRPORT NAVIGATION SYSTEM	FORECAST AIRCRAFT MOVEMENT	DESIGN SERVICE YEARS	FUNCTION GOVERNED	AMC	ICC	PCV	THICKNESS ****
RW 15-33	0.- 3.	KEEL	0.12	145.	179545.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.07	4.22	5.37	1.0
RW 15-33	3.- 30.	KEEL	0.12	145.	34885.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.07	10.13	11.07	10.9
RW 15-33	30.- 53.	KEEL	0.12	145.	34885.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.07	10.17	11.12	11.0
RW 15-33	53.- 69.	KEEL	0.12	145.	34885.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.07	9.88	10.79	10.5
RW 15-33	69.- 77.	KEEL	0.12	145.	27745.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.07	10.45	11.33	11.4
RW 15-33	77.- 78.	KEEL	0.12	145.	165589.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.07	4.22	5.32	1.0
RW 15-33	0.- 3.	SIDE	0.18	145.	179545.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.05	4.22	5.00	1.0
RW 15-33	3.- 30.	SIDE	0.18	145.	34885.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.05	7.58	8.24	6.6
RW 15-33	30.- 53.	SIDE	0.18	145.	34885.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.05	7.60	8.29	6.7
RW 15-33	53.- 69.	SIDE	0.18	145.	34885.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.04	7.43	7.91	6.4
RW 15-33	69.- 77.	SIDE	0.18	145.	27745.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.04	7.97	8.44	7.3
RW 15-33	77.- 78.	SIDE	0.18	145.	165589.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.04	4.22	4.82	1.0
RW 15-33	0.- 3.	KEEL	0.12	145.	179545.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.08	4.22	5.48	1.0
RW 15-33	3.- 30.	KEEL	0.12	145.	34885.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.08	10.96	11.98	12.3
RW 15-33	30.- 53.	KEEL	0.12	145.	34885.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.08	11.02	12.04	12.4
RW 15-33	53.- 69.	KEEL	0.12	145.	34885.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.07	10.66	11.66	11.8
RW 15-33	69.- 77.	KEEL	0.12	145.	27745.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.07	11.25	12.23	12.8
RW 15-33	77.- 78.	KEEL	0.12	145.	165589.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.07	4.22	5.45	1.0
RW 15-33	0.- 3.	SIDE	0.18	145.	179545.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.07	4.22	5.42	1.0
RW 15-33	3.- 30.	SIDE	0.18	145.	34885.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.07	8.14	9.20	7.6
RW 15-33	30.- 53.	SIDE	0.18	145.	34885.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.07	8.18	9.26	7.6
RW 15-33	53.- 69.	SIDE	0.18	145.	34885.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.07	7.96	8.93	7.3
RW 15-33	69.- 77.	SIDE	0.18	145.	27745.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.07	8.51	9.46	8.2
RW 15-33	77.- 78.	SIDE	0.18	145.	165589.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.07	4.22	5.32	1.0
RW 1-19	16.- 52.	KEEL	0.12	145.	32267.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.06	9.75	10.58	10.3
RW 1-19	16.- 52.	SIDE	0.18	145.	32267.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.02	7.38	7.48	6.3

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

LISTING OF PAVEMENT DESIGN AND COST ANALYSIS

EQUIVALENT AIRCRAFT OPERATION: B727-200 WEIGHT: 170000. LBS

PAVEMENT MODEL: CODE LAYER THICKNESS EVALUE POISSON UNIT-PRICE

CC/PAV	PCCR	****	5000000.	0.11	1.58
	ASTCP	1.0	200000.	0.23	1.15
	PAV	INFI	****	0.27	0.18

FACILITY	STATION FROM-TO	LOC	DI	VEL	SPAV NORM ****	AIRPORT NAVIGATION SYSTEM	FORECAST AIRCRAFT MOVEMENT	DESIGN SERVICE YEARS	FUNCTION GOVERNED	AMC	ICC	PCV	THICKNESS ****
RW 15-33	0.- 3.	KEEL	0.12	145.	179545.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.12	7.64	9.56	4.0
RW 15-33	3.- 30.	KEEL	0.12	145.	34885.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.12	14.44	16.11	8.3
RW 15-33	30.- 53.	KEEL	0.12	145.	34885.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.12	14.50	16.18	8.3
RW 15-33	53.- 69.	KEEL	0.12	145.	34885.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.11	13.99	15.59	8.0
RW 15-33	69.- 77.	KEEL	0.12	145.	27745.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.11	14.85	16.41	8.6
RW 15-33	77.- 78.	KEEL	0.12	145.	165589.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.11	7.64	9.46	4.0
RW 15-33	0.- 3.	SIDE	0.18	145.	179545.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.08	7.64	8.79	4.0
RW 15-33	3.- 30.	SIDE	0.18	145.	34885.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.08	10.12	11.18	5.6
RW 15-33	30.- 53.	SIDE	0.18	145.	34885.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.08	10.16	11.27	5.6
RW 15-33	53.- 69.	SIDE	0.18	145.	34885.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.06	9.86	10.58	5.4
RW 15-33	69.- 77.	SIDE	0.18	145.	27745.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.06	10.60	11.29	5.9
RW 15-33	77.- 78.	SIDE	0.18	145.	165589.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.06	7.64	8.43	4.0
RW 15-33	0.- 3.	KEEL	0.12	145.	179545.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.13	7.64	9.76	4.0
RW 15-33	3.- 30.	KEEL	0.12	145.	34885.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.13	15.69	17.52	9.1
RW 15-33	30.- 53.	KEEL	0.12	145.	34885.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.13	15.78	17.62	9.2
RW 15-33	53.- 69.	KEEL	0.12	145.	34885.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.12	15.20	16.99	8.8
RW 15-33	69.- 77.	KEEL	0.12	145.	27745.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.12	16.03	17.79	9.3
RW 15-33	77.- 78.	KEEL	0.12	145.	165589.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.12	7.64	9.70	4.0
RW 15-33	0.- 3.	SIDE	0.18	145.	179545.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.12	7.64	9.56	4.0
RW 15-33	3.- 30.	SIDE	0.18	145.	34885.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.12	10.93	12.73	6.1
RW 15-33	30.- 53.	SIDE	0.18	145.	34885.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.12	10.99	12.82	6.1
RW 15-33	53.- 69.	SIDE	0.18	145.	34885.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.11	10.64	12.25	5.9
RW 15-33	69.- 77.	SIDE	0.18	145.	27745.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.11	11.45	13.03	6.4
RW 15-33	77.- 78.	SIDE	0.18	145.	165589.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.11	7.64	9.35	4.0
RW 1-19	16.- 52.	KEEL	0.12	145.	32267.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.10	13.79	15.24	7.9
RW 1-19	16.- 52.	SIDE	0.18	145.	32267.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.02	9.77	9.82	5.3

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

LISTING OF PAVEMENT DESIGN AND COST ANALYSIS

EQUIVALENT AIRCRAFT OPERATION: B727-200 WEIGHT: 170000. LBS

PAVEMENT MODEL: CODE LAYER THICKNESS EVALUE POISSON UNIT-PRICE

AC/PAV	ASTOP	1.0	200000.	0.23	1.15
	ASBS	****	150000.	0.24	1.03
	PFLPAV				0.18

FACILITY	STATION FROM-TO	LOC	DI	VEL	ESUB NORM ++++	AIRPORT NAVIGATION SYSTEM	FORECAST AIRCRAFT MOVEMENT	DESIGN SERVICE YEARS	FUNCTION GOVERNED	AMC	ICC	PCV	THICKNESS ****	PFLPA
RW 15-33	0.- 3.	KEEL	0.12	145.	34283.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.08	2.35	3.68	1.0	CC7
RW 15-33	3.- 30.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.08	2.35	3.87	1.0	AC2
RW 15-33	30.- 53.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.09	2.35	3.87	1.0	AC2
RW 15-33	53.- 69.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.08	2.35	3.81	1.0	AC2
RW 15-33	69.- 77.	KEEL	0.12	145.	13980.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.08	2.35	3.81	1.0	AC1
RW 15-33	77.- 78.	KEEL	0.12	145.	30628.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.07	2.35	3.61	1.0	CC7
RW 15-33	0.- 3.	SIDE	0.18	145.	34283.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.05	2.35	3.12	1.0	CC7
RW 15-33	3.- 30.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.06	2.35	3.43	1.0	AC2
RW 15-33	30.- 53.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.06	2.35	3.46	1.0	AC2
RW 15-33	53.- 69.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.05	2.35	3.22	1.0	AC2
RW 15-33	69.- 77.	SIDE	0.18	145.	13980.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.05	2.35	3.22	1.0	AC1
RW 15-33	77.- 78.	SIDE	0.18	145.	30628.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.03	2.35	2.85	1.0	CC7
RW 15-33	0.- 3.	KEEL	0.12	145.	34283.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.08	2.35	3.82	1.0	CC7
RW 15-33	3.- 30.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	20	DEF/DI	0.09	3.10	4.72	1.7	AC2
RW 15-33	30.- 53.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	20	DEF/DI	0.09	3.36	4.98	2.0	AC2
RW 15-33	53.- 69.	KEEL	0.12	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.09	2.35	3.96	1.0	AC2
RW 15-33	69.- 77.	KEEL	0.12	145.	13980.	LIGHTS/ILS	FAMSUG	20	DEF/DI	0.09	4.86	6.37	3.4	AC1
RW 15-33	77.- 78.	KEEL	0.12	145.	30628.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.08	2.35	3.76	1.0	CC7
RW 15-33	0.- 3.	SIDE	0.18	145.	34283.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.07	2.35	3.64	1.0	CC7
RW 15-33	3.- 30.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.09	2.35	3.91	1.0	AC2
RW 15-33	30.- 53.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.09	2.35	3.94	1.0	AC2
RW 15-33	53.- 69.	SIDE	0.18	145.	14158.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.08	2.35	3.80	1.0	AC2
RW 15-33	69.- 77.	SIDE	0.18	145.	13980.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.08	2.35	3.80	1.0	AC1
RW 15-33	77.- 78.	SIDE	0.18	145.	30628.	LIGHTS/ILS	FAMSUG	20	STR/MT	0.06	2.35	3.48	1.0	CC7
RW 1-19	16.- 52.	KEEL	0.12	145.	17732.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.08	2.35	3.71	1.0	AC1
RW 1-19	16.- 52.	SIDE	0.18	145.	17732.	LIGHTS/ILS	FAMSUG	5	STR/MT	0.03	2.35	2.78	1.0	AC1

BURLINGTON INTERNATIONAL AIRPORT - FAA NEW ENGLAND REGION

COST/BENEFIT STUDY

FACILITY	DESIGN SERVICE YEARS	AIRPORT NAVIGATION SYSTEM	FORECAST AIRCRAFT MOVEMENT	WIDTH RATIO/ TOTAL	SIDE	WEIGHTED AVERAGE OF PRESENT CASH VALUE, $/SY LCF	AC	CC	CCL	LC/PAV	AC/PAV	CC/PAV	LCF AC/PAV	CC AC/PAV	CCL PAV
Rw 15-33	5	LIGHTS/ILS	FAMSUG	45./150.	:	11.24	7.84	14.44	15.90	9.78	3.67	14.12	6.36	8.32	5.60
Rw 15-33	20	LIGHTS/ILS	FAMSUG	45./150.	:	11.89	9.30	16.00	16.32	10.67	4.44	15.44	7.21	9.59	5.64
Rw 1-19	5	LIGHTS/ILS	FAMSUG	45./150.	:	10.93	6.59	12.95	15.37	9.49	3.38	13.34	5.74	7.37	5.37
Rw 1-19	20	LIGHTS/ILS	FAMSUG	45./150.	:	11.47	8.15	14.71	16.10	10.56	4.23	15.11	6.37	8.37	5.44
Tw A	5	NORM/VISUAL	FAMSUG	41./ 75.	:	11.43	8.46	15.67	16.05	10.75	3.74	15.44	8.51	12.07	9.74
Tw A	20	NORM/VISUAL	FAMSUG	41./ 75.	:	12.17	10.00	17.34	16.41	11.79	3.98	17.09	9.31	13.09	9.82
GATE/APRN	5	NORM/VISUAL	FAMSUG	41./ 75.	:	11.91	9.72	16.49	15.95	11.38	3.64	16.31	8.98	12.48	9.68
GATE/APRN	20	NORM/VISUAL	FAMSUG	41./ 75.	:	12.70	11.42	18.12	16.60	12.44	4.56	17.97	9.93	13.53	10.04
XTWS TO A	5	NORM/VISUAL	FAMSUG		:	11.76	10.53	18.07	16.19	11.51	3.73	16.59	11.76	18.07	16.19
XTWS TO A	20	NORM/VISUAL	FAMSUG		:	12.93	12.96	19.45	16.40	12.49	3.93	18.16	12.93	19.45	16.40
Tw B	5	NORM/VISUAL	FAMSUG	41./ 75.	:	11.20	6.87	14.44	15.71	9.95	3.53	14.13	8.23	11.23	9.66
Tw B	20	NORM/VISUAL	FAMSUG	41./ 75.	:	11.55	8.64	16.09	16.23	10.98	3.86	15.82	8.66	12.35	9.78
Tw C	5	NORM/VISUAL	FAMSUG	41./ 75.	:	11.29	6.97	14.38	15.83	9.98	3.60	14.22	8.32	11.33	9.69
Tw C	20	NORM/VISUAL	FAMSUG	41./ 75.	:	11.59	8.57	16.17	16.29	11.02	3.90	15.88	8.71	12.42	9.79
APRON GA	5	NORM/VISUAL	FAMSUG	41./ 75.	:	11.43	9.04	15.50	15.41	8.05	5.59	11.96	9.31	12.63	10.64
APRON GA	20	NORM/VISUAL	FAMSUG	41./ 75.	:	12.36	10.91	17.35	16.07	8.98	7.37	13.71	10.39	13.90	10.78
Tw D	5	NORM/VISUAL	FAMSUG	41./ 75.	:	11.21	6.87	14.48	15.71	10.00	3.53	14.19	8.23	11.26	9.66
Tw D	20	NORM/VISUAL	FAMSUG	41./ 75.	:	11.55	8.78	16.17	16.23	11.03	3.86	15.88	8.66	12.38	9.78
Tw E	5	NORM/VISUAL	FAMSUG	41./ 75.	:	11.24	7.32	14.32	15.47	10.14	3.39	14.32	8.03	11.16	9.62
Tw E	20	NORM/VISUAL	FAMSUG	41./ 75.	:	11.66	9.15	16.06	16.12	11.20	3.79	16.05	8.75	12.37	9.75
Tw F	5	NORM/VISUAL	FAMSUG	41./ 75.	:	11.33	7.24	14.66	15.91	9.98	3.65	14.25	8.38	11.40	9.70
Tw F	20	NORM/VISUAL	FAMSUG	41./ 75.	:	11.61	8.51	16.22	16.33	10.99	3.93	15.91	8.74	12.46	9.80
APRN VANG	5	NORM/VISUAL	FAMSUG	41./ 75.	:	11.20	8.41	15.22	15.66	10.65	3.46	15.16	8.22	11.74	9.61
APRN VANG	20	NORM/VISUAL	FAMSUG	41./ 75.	:	12.14	10.96	17.03	16.19	11.79	3.81	16.88	9.25	12.87	9.74
RW1-19EXT	20	LIGHTS/ILS	FAMSUG	45./150.	:	11.79	8.81	15.78	16.09						
Tw NEW	20	NORM/VISUAL	FAMSUG	41./ 75.	:	12.63	11.18	18.04	16.52						
XTW-GA NU	20	NORM/VISUAL	FAMSUG	41./ 75.	:	12.21	10.24	17.15	16.22						
Tw - Rw19	20	NORM/VISUAL	FAMSUG	41./ 75.	:	11.98	9.79	16.69	16.13						

ERROR MESSAGES AND DIAGNOSTICS

The input goes through two stages:

1. Identification stage in which the input data group or control card must be recognized. If it is not then an error message is printed. All cards are printed and the error is temporarily ignored until the next delimitor ** is encountered. If a control card is mispelled, the next data group will be flagged in error yet the program will assume as if the 1st card of a data group is in error.

2. Data verification in which the progtam prints a limited number of self-explanatory error messages. FORTRAN will print messages if the characters do not match the field, such as type of integer or floating point. FORTRAN will also print execution error messages, such as mispunched, incorrect or missing data.

Error messages printed in the system log at the beginning of each job listing can be referenced to the OS 360 Manual. These messages help identify whether the program, JCL or hardware caused the error.

REFERENCES

1. Yang, Nai C., DESIGN OF FUNCTIONAL PAVEMENTS, McGraw Hill Book Company, New York, 1972.
2. Yang, Nai C., "Nondestructive Evaluation of Civil Airport Pavements", FAA-RD-76-83, September, 1976.
3. Yang, Nai C., "Nondestructive Evaluation of Airport Pavements, Vol. I, Program References", FAA-RD-78-154 I, September 1979.

APPENDIX 1. OS 360 JOB CONTROL CARDS FOR OPERATION AT TCC
TCC OPERATION ON IBM 360/65

The program set-ups consist of two primary procedures: PAVDES, PRINT and one auxiliary procedure DELETE. These procedures may be stored on a permanent data set and referenced through use of the PROCLIB DD card, or instream procedures on cards. The following deck set-up describes the use of instream procedures:

```
//JOBNAME JOB
Instream procedure or //PROCLIB DD
//EXEC PAVDES,JOBCODE='jobcode',TIME.PAVDES=15
//PAVDES.INPUT DD *
Program control cards & data groups
/*
//EXEC PRINT,JOBCODE='jobcode'
```

Jobcode is normally 7 characters, 3 letter airport, dash, and 3 letter FAA regional code. To have the output going directly to the printer instead of a print file, deck should be:

```
//EXEC PAVDES,JOBCODE='BTV-ANE',TIME.PAVDES=15
//PAVDES.FT06F001 DD SYSOUT=A,DCB=(RECFM=FA,LRECL=133,BLKSIZE=133)
//PAVDES.INPUT DD*
Program control cards & data groups
/*
//
```

The procedures assume the load module data set, DYLM, the default input data set DYDS and the job print file (jobcode.PRINT) which are on a single removable pack D00012. Several temporary data sets, as required, are allocated on any 2 available scratch packs. The temporary data sets may be placed on the single pack D00012, but the execution wall clock time will increase due to arm contention.

There is another procedure to delete existing print files from D00012 if they are no longer needed. The format for using it is as:

```
//EXEC DELETE
//DD1 DD DSNAME=jobcode.PRINT
```

Procedure consists of a utility program to be used to delete the file. It can be used as a separate run or with the PAVDES procedure.

Job Control Cards for Operation at TCC

```
//DELETE PROC
//X EXEC PGM=IEFBR14,REGION=10K
//DD1 DD DUMMY,DISP=(OLD,DELETE),UNIT=3330,
// VOL=(PRIVATE,RETAIN,,,SER=D00012)
//DD2 DD DUMMY,DISP=(OLD,DELETE),UNIT=3330,VOL=SER=D00012
// PEND
//UPS PROC PRINT=YES
//UP EXEC PGM=UPSED,REGION=86K
//STEPLIB DD DSNAME=DYLM,DISP=SHR,UNIT=3330,
// VOL=(PRIVATE,RETAIN,,,SER=D00012)
//FT01F001 DD DDNAME=SI
//FT02F001 DD DDNAME=SO
//FT04F001 DD UNIT=SYSDA,
// SPACE=(CYL,(1,1)),DCB=(RECFM=FB,LRECL=80,BLKSIZE=800)
//FT05F001 DD DDNAME=TCF
//FT06F001 DD DDNAME=&PRINT
//YES DD SYSOUT=A
//NO DD DUMMY
//SI DD DUMMY,DISP=SHR,UNIT=3330,VOL=SER=D00012
//SO DD DUMMY,DISP=(,KEEP),UNIT=3330,VOL=SER=D00012,
// SPACE=(CYL,(2,2)),DCB=(RECFM=FB,LRECL=80,BLKSIZE=800)
// PEND
//PAVDES PROC
// EXEC PGM=IEFBR14,REGION=10K
//DD1 DD DSNAME=&JOBCODE..PRINT,DISP=(OLD,DELETE),UNIT=3330,
// VOL=(PRIVATE,RETAIN,,,SER=D00012)
//PAVDES EXEC PGM=GDC,REGION=290K
//STEPLIB DD DSNAME=DYLM,DISP=SHR,UNIT=3330,
// VOL=(PRIVATE,RETAIN,,,SER=D00012)
//FT03F001 DD DSNAME=DYDS,DISP=SHR,UNIT=3330,VOL=SER=D00012
//FT04F001 DD DDNAME=INPUT
//FT05F001 DD UNIT=(SYSDA,SEP=STEPLIB),VOL=(PRIVATE,RETAIN),
// SPACE=(CYL,(2,2)),DCB=(RECFM=FB,LRECL=80,BLKSIZE=800)
//FT06F001 DD DSNAME=&JOBCODE..PRINT,DISP=(,KEEP),UNIT=3330,
// VOL=SER=D00012,
// SPACE=(CYL,(4,4)),DCB=(RECFM=FBS,LRECL=133,BLKSIZE=1330)
//FT07F001 DD UNIT=SYSDA,VOL=REF=*.FT05F001,
// SPACE=(CYL,(2,2)),DCB=(RECFM=FB,LRECL=80,BLKSIZE=800)
//FT08F001 DD UNIT=SYSDA,VOL=REF=*.FT05F001,
// SPACE=(CYL,(2,2)),DCB=(RECFM=FB,LRECL=80,BLKSIZE=800)
//FT09F001 DD UNIT=(SYSDA,SEP=(STEPLIB,FT05F001)),VOL=(PRIVATE,RETAIN),
// SPACE=(CYL,(1,1)),DCB=(RECFM=VSB,LRECL=1284,BLKSIZE=2572)
//FT10F001 DD UNIT=SYSDA,VOL=REF=*.FT05F001,
// SPACE=(CYL,(1,1)),DCB=(RECFM=VSB,LRECL=1284,BLKSIZE=2572)
//FT11F001 DD UNIT=3330,VOL=SER=D00012,
// SPACE=(CYL,(2,2)),DCB=(RECFM=FB,LRECL=80,BLKSIZE=800)
//FT12F001 DD UNIT=SYSDA,VOL=REF=*.FT09F001,
// SPACE=(CYL,(1,1)),DCB=(RECFM=VSB,LRECL=1284,BLKSIZE=2572)
//FT13F001 DD UNIT=3330,VOL=SER=D00012,
// SPACE=(CYL,(2,2)),DCB=(RECFM=FB,LRECL=80,BLKSIZE=800)
```

Job Control Cards (cont'd)

```
//FT14F001 DD UNIT=SYSDA,VOL=REF=*.FT05F001,
// SPACE=(CYL,(1,1)),DCB=(RECFM=VSB,LRECL=1284,BLKSIZE=2572)
//FT15F001 DD DUMMY
//FT16F001 DD UNIT=SYSDA,VOL=REF=*.FT09F001,
// SPACE=(CYL,(1,1)),DCB=(RECFM=VSB,LRECL=1284,BLKSIZE=2572)
//FT17F001 DD UNIT=SYSDA,VOL=REF=*.FT09F001,
// SPACE=(CYL,(1,1)),DCB=(RECFM=VSB,LRECL=1284,BLKSIZE=2572)
//FT18F001 DD UNIT=SYSDA,VOL=REF=*.FT09F001,
// SPACE=(CYL,(1,1)),DCB=(RECFM=VSB,LRECL=1284,BLKSIZE=2572)
//FT19F001 DD UNIT=SYSDA,VOL=REF=*.FT09F001,
// SPACE=(CYL,(2,2)),DCB=(RECFM=VSB,LRECL=1284,BLKSIZE=2572)
//FT20F001 DD UNIT=SYSDA,VOL=REF=*.FT09F001,
// SPACE=(CYL,(2,2)),DCB=(RECFM=VSB,LRECL=1284,BLKSIZE=2572)
//FT21F001 DD UNIT=SYSDA,VOL=REF=*.FT09F001,
// SPACE=(CYL,(1,1)),DCB=(RECFM=FB,LRECL=80,BLKSIZE=800)
//FT22F001 DD UNIT=SYSDA,VOL=REF=*.FT09F001,
// SPACE=(CYL,(1,1)),DCB=(RECFM=FB,LRECL=80,BLKSIZE=800)
//FT23F001 DD UNIT=SYSDA,VOL=REF=*.FT09F001,
// SPACE=(CYL,(1,1)),DCB=(RECFM=FB,LRECL=80,BLKSIZE=800)
//FT24F001 DD UNIT=SYSDA,VOL=REF=*.FT09F001,
// SPACE=(CYL,(2,2)),DCB=(RECFM=FB,LRECL=80,BLKSIZE=800)
//FT25F001 DD UNIT=SYSDA,VOL=REF=*.FT09F001,
// SPACE=(CYL,(1,1)),DCB=(RECFM=FB,LRECL=80,BLKSIZE=800)
//FT26F001 DD UNIT=SYSDA,VOL=REF=*.FT09F001,
// SPACE=(CYL,(2,2)),DCB=(RECFM=FB,LRECL=80,BLKSIZE=800)
//FT27F001 DD UNIT=SYSDA,VOL=REF=*.FT09F001,
// SPACE=(CYL,(1,1)),DCB=(RECFM=FB,LRECL=80,BLKSIZE=800)
//FT28F001 DD UNIT=SYSDA,VOL=REF=*.FT09F001,
// SPACE=(CYL,(1,1)),DCB=(RECFM=FB,LRECL=80,BLKSIZE=800)
//FT29F001 DD UNIT=SYSDA,VOL=REF=*.FT09F001,
// SPACE=(CYL,(1,1)),DCB=(RECFM=FB,LRECL=80,BLKSIZE=800)
//FT30F001 DD UNIT=SYSDA,VOL=REF=*.FT09F001,
// SPACE=(CYL,(1,1)),DCB=(RECFM=FB,LRECL=80,BLKSIZE=800)
//FT31F001 DD UNIT=SYSDA,VOL=REF=*.FT05F001,
// SPACE=(CYL,(1,1)),DCB=(RECFM=FB,LRECL=80,BLKSIZE=800)
//FT32F001 DD UNIT=SYSDA,VOL=REF=*.FT05F001,
// SPACE=(CYL,(4,4)),DCB=(RECFM=VSB,LRECL=1284,BLKSIZE=2572)
// PEND
//PRINT PROC
//PRINT EXEC PGM=IEBGENER,REGION=86K
//SYSIN DD DUMMY
//SYSPRINT DD DUMMY
//SYSUT1 DD DSNAME=&JOBCODE..PRINT,DISP=OLD,UNIT=3330,
// VOL=(PRIVATE,RETAIN,,,SER=D00012)
//SYSUT2 DD SYSOUT=A,DCB=(RECFM=FA,LRECL=133,BLKSIZE=133)
// PEND
```

APPENDIX 2 BASIC FORTRAN LISTING

A2.01 SUBROUTINE NDTIN
Compute NDT calibration factors

A2.02 SUBROUNTINE NDTE
Compute E-value from NDT machine data

A2.03 SUBROUTINE LINER
Linear regression for NDT2

A2.04 SUBROUTINE STAT
Mean and standard deviation for NDT2

A2.05 SUBROUTINE NDT3
Compute NDT inventory file

A2.06 SUBROUTINE CALC(1)
Compute Poisson's ratio, and aircraft operational weights

A2.07 SUBROUTINE CALC(2)
Longitudinal and transverse wheel probability distribution

A2.08 SUBROUTINE PAVDES
Equivalent single type aircraft operation and unit price of pavement components

A2.09 SUBROUTINE FAM
Forecast of aircraft movement for equivalency computation

A2.10 SUBROUTINE HDES
Limiting stress and deflection in pavement thickness design

A2.11 SUBROUTINE PCVCAL
Compute present cash value

A2.12 SUBROUTINE COBEN
Weighted average of present cash value

A2.01 Subroutine NDTIN

```
      C     CALIBRATION FACTORS
  225 WRITE(6,125)
      IPTCAL(1)=1
      K=0
  230 K=K+1
      READ(5,20,END=235) I,J,CDATE(I,1),CDATE(I,2),
     +CTIME(I,J),ZCAL(I,J),FCAL(I,J),ZATZ,FATZ,ZATC,FATC
      IF(J.NE.1)GO TO 231
      IPTCAL(I)=IPTCAL(I)+1
      L=IPTCAL(I)
      IPTCAL(L)=I
  231 NCAL(I,J)=1.0000
      IF(ZATC.GT..01)GO TO 232
      ZATZ=0.
      FATZ=0.
      ZATC=1.
      FATC=1.
  232 IF(ZCAL(I,J).LE..01)ZCAL(I,J)=(ZATC-ZATZ)/ZATC
      IF(FCAL(I,J).LE..01)FCAL(I,J)=(FATC-FATZ)/FATC
      IF(K.EQ.1) WRITE(6,130) CDATE(I,1),CDATE(I,2),
     +I,CTIME(I,J),J,ZCAL(I,J),FCAL(I,J),NCAL(I,J)
      GO TO 230
  235 NCAL=K-1
      GO TO 200
      C     GRID DICTIONARY
  237 WRITE(6,135)
      I=0
  240 I=I+1
      READ(5,15,END=245) (DICTG(I,J),J=1,9)
      IF(I.EQ.1) WRITE(6,120) (DICTG(I,J),J=1,9)
      GO TO 240
  245 NDICTG=I-1
      GO TO 200
      C     TEST IDENTIFICATIONS
  247 WRITE(6,140)
      I=0
  250 I=I+1
      READ(5,25,END=260)INUM(I,1),INUM(I,2),(LOC(I,J),J=1,5),
     +IDATE(I,1),TIME(I),IDATE(I,2),TEMP(I),DSMW(I),LOAD(I),
     +RAD(I),MSPORT(I,1),MSPORT(I,2),MOPUT(I,1),MOPUT(I,2)
      IF(I.EQ.1)WRITE(6,145)INUM(I,1),INUM(I,2),(LOC(I,J),J=1,5),
     +IDATE(I,1),TIME(I),IDATE(I,2),TEMP(I),DSMW(I),LOAD(I),
     +RAD(I),MSPORT(I,1),MSPORT(I,2),MOPUT(I,1),MOPUT(I,2)
      GO TO 250
  260 NLOC=I-1
      GO TO 200
  900 RETURN
      END
```

A2.02 Subroutine NDTE

```
      SUBROUTINE NDTE(ZVAL,FVAL,HVAL,NVAL,ZNSUMZ,DSME,EVAL,DSM,RAD)
      DIMENSION ZVAL(NVAL),FVAL(NVAL),HVAL(NVAL)
      DIMENSION Z(50),F(50),H(50)
      DO 100 I=1,NVAL
      J=NVAL-I+1
      Z(J)=ZVAL(I)
      F(J)=FVAL(I)
      H(J)=HVAL(I)
  100 CONTINUE
      N=NVAL
      N1=N-1
      SUMZ=(Z(1)/(2.*F(1)))*(H(1)+H(2))/(2.*H(1))
      DO 210 I=2,N1
      SUMZ=SUMZ+(Z(I)/(2.*F(I)))*(H(I+1)-H(I-1))/(2.*H(I))
  210 CONTINUE
      SUMZ=SUMZ+Z(N)/(4.*F(N))
      ZNSUMZ=SUMZ
      DSM=F(1)/1000./Z(1)
      DSME=(F(1)/Z(1))*(2.*RAD*SUMZ)
      EVAL=1./(2.*RAD*SUMZ)
      RETURN
      END
```

A2.03 Subroutine LINER

```
      SUBROUTINE LINER(IPT,N,X,Y,NLOC,BZERO,BONE,ROE,
     +SPX,SPX2,SPY,SPY2,SPXY)
      DIMENSION IPT(N),X(NLOC),Y(NLOC)
      DOUBLE PRECISION SUMX,SUMX2,SUMY,SUMY2,SUMXY,XD,YD,AN,SXX,SYY,SXY
      SUMX=0.
      SUMX2=0.
      SUMY=0.
      SUMY2=0.
      SUMXY=0.
      DO 100 IA=1,N
      I=IPT(IA)
      XD=X(I)
      YD=Y(I)
      SUMX=SUMX+XD
      SUMX2=SUMX2+XD*XD
      SUMY=SUMY+YD
      SUMY2=SUMY2+YD*YD
      SUMXY=SUMXY+XD*YD
  100 CONTINUE
      AN=N
      SPX=SUMX
      SPX2=SUMX2
      SPY=SUMY
      SPY2=SUMY2
      SPXY=SUMXY
      SXX=SUMX2-SUMX*SUMX/AN
      SYY=SUMY2-SUMY*SUMY/AN
      SXY=SUMXY-SUMX*SUMY/AN
      ROE=SXY/DSQRT(SXX*SYY)
      XD=SXY/SXX
      BONE=XD
      BZERO=SUMY/AN-XD*SUMX/AN
C     WRITE(6,5)
    5 FORMAT(///5X,'    N      SUMX           SUMX2          SUMY          '
     +,'SUMY2          SUMXY'/)
C     WRITE(6,10)N,SUMX,SUMX2,SUMY,SUMY2,SUMXY
   10 FORMAT(5X,I5,5D14.7)
      RETURN
      END
```

A2.04 Subroutine STAT

```
      SUBROUTINE STAT(IPT,N,X,NLOC,AMEAN,CV,XMIN,XMAX)
      DIMENSION IPT(N),X(NLOC)
      DOUBLE PRECISION SUM,SUM2,XD,AN,AN1,SDEV
      SUM=0.
      SUM2=0.
      I=IPT(1)
      XMIN=X(I)
      XMAX=X(I)
      DO 100 IA=1,N
      I=IPT(IA)
      IF(X(I).LT.XMIN)XMIN=X(I)
      IF(X(I).GT.XMAX)XMAX=X(I)
      XD=X(I)
      SUM=SUM+XD
      SUM2=SUM2+XD*XD
  100 CONTINUE
      AN=N
      AN1=N-1
      XD=SUM/AN
      SDEV=DSQRT((SUM2-AN*XD*XD)/AN1)
      AMEAN=XD
      CV=SDEV/XD
      RETURN
      END
```

A2.05 Subroutine NDT3

```
      DO 600 J=1,ISEPAV
      IF(K.NE.IPFL(J))GO TO 600
      WZ=2.*200.*9.*VALC(KP,10)/SEVAL(J)
      IF(WZ.LT.WZH(1,1))GO TO 520
      EV=PFLESG(1)*.75
      GO TO 540
  520 DO 530 I=2,NFLESG
      IF(WZ.LT.WZH(1,I))GO TO 530
      EV=(PFLESG(I)-PFLESG(I-1))*(WZ-WZH(1,I-1))
     +/(WZH(1,I)-WZH(1,I-1))+PFLESG(I-1)
      GO TO 540
  530 CONTINUE
      EV=PFLESG(NFLESG)*1.25
  540 IF(MORAIN(J).EQ.MNORM)GO TO 550
      IS=J
      I1=ISEPAV+J
      EPAV(I1)=SEVAL(J)
      ESUB(I1)=EV
      ESUB(J)=EV/.6
      GO TO 560
  550 IS=ISEPAV+J
      EPAV(J)=SEVAL(J)
      ESUB(J)=EV
      I1=ISEPAV+J
      ESUB(I1)=.6*EV
  560 IF(ESUB(IS).GT.PFLESG(1))GO TO 570
      WZA=WZH(1,1)+.25*(WZH(1,1)-WZH(1,2))
      GO TO 590
  570 DO 580 I=2,NFLESG
      IF(ESUB(IS).GT.PFLESG(I))GO TO 580
      WZA=(WZH(1,I)-WZH(1,I-1))*(ESUB(IS)-PFLESG(I-1))
     +/(PFLESG(I)-PFLESG(I-1))+WZH(1,I-1)
      GO TO 590
  580 CONTINUE
      WZA=WZH(1,NFLESG)-.25*(WZH(1,NFLESG-1)-WZH(1,NFLESG))
  590 EPAV(IS)=SEVAL(J)*WZ/WZA
  600 CONTINUE
```

A2.06 Subroutine CALC(1)

```
C *** APY
      APY(I)=0.
      N=NWHEEL(I)
      DO 420 J=1,N
      IF(WHEELX(I,J).NE.0.)GO TO 420
      APY(I)=APY(I)+EXP(-(WHEELY(I,J)/(12.*450.))**2/2.)
  420 CONTINUE
      DO 460 J=1,3
C *** RADIUS FACTOR
      RADIUS(I,J)=SQRT(.31830987E0*DUPWGT(L,J)*AIRC(I,5)/AIRC(I,6))
      FACTOR(I,J)=0.
      T1=(3./8.)**2
      T2=(15./48.)**2
      DO 440 K=1,N
      WX=SQRT(ABS(WHEELX(I,K)**2)+ABS(WHEELY(I,K)**2))
      IF(WX.NE.0.)GO TO 430
      FACTOR(I,J)=FACTOR(I,J)+1.
      GO TO 440
  430 YK=(RADIUS(I,J)/WX)**2
      WK=1.5708*(1.+.25*YK+T1*YK**2+T2*YK**3)
      WE=1.5708*(1.-.25*YK-T1*YK**2/3.-T2*YK**3/5.)
      FIRM=2./3.14159*WX/RADIUS(I,J)*(WE-(1-YK)*WK)
      FACTOR(I,J)=FACTOR(I,J)+FIRM
  440 CONTINUE
  450 CONTINUE
      APY(I)=APY(I)*.00157*RADIUS(I,3)/12.
  460 CONTINUE
      ID=IDESI(1)
      RADIUS(20,1)=SQRT(.31830987E0*DUPWGT(1)*AIRC(ID,5)/AIRC(ID,6))
C *** APX
      DO 560 K=1,NBAND
      IAPX=NTYPE*(K-1)
      DO 550 LA=1,NTYPE
      L=IAPX+LA
      DO 540 M=1,NDPWGT
      I=IAIRC(M)
      IF(I.LE.0)GO TO 540
      NW=NWHEEL(I)
      DO 530 J=1,3
      APX(I,J,L)=0.
      DO 520 N=1,NW
      APX(I,J,L)=APX(I,J,L)+EXP(-10.8167*
     +(WHEELX(I,N)/(12.*BAND(K,LA)))**2)
  520 CONTINUE
      APX(I,J,L)=APX(I,J,L)*3.2885*RADIUS(I,J)/(12.*BAND(K,LA))
  530 CONTINUE
  540 CONTINUE
```

A2.07 Subroutine CALC(2)

```
C *** PAVL CODE LAYER
      DO 260 I=1,NPAVL
  230 N=NLAYER(I)
      DO 250 J=1,N
      DO 240 K=1,NLAY
      IF(LAYER(I,J,1).NE.MLAY(K,1))GO TO 240
      IF(LAYER(I,J,2).NE.MLAY(K,2))GO TO 240
      ILAYER(I,J)=K
      IF(EVAL(I,J).LT.1.)EVAL(I,J)=VALAY(K,1)
      IF(POIS(I,J).LT.0.001)POIS(I,J)=.65-.08*ALOG10(EVAL(I,J))
      GO TO 250
  240 CONTINUE
C *** ERROR
  250 CONTINUE
  260 CONTINUE
C *** AIRC CODE TOW
      DO 255 I=1,NAIRC
      IALF(I)=0
      IRANGE(I)=0
  255 CONTINUE
      DO 270 K=1,NOPWGT
      I=IAIRC(K)
      IF(I.LE.0)GO TO 270
      IRANGE(I)=1
      IF(LRANGE(K,1).NE.IBLANK)GO TO 261
      LRANGE(K,1)=MRANG(I,1)
      LRANGE(K,2)=MRANG(I,2)
  261 DO 262 J=1,4
      IF(LRANGE(K,1).NE.MRANGE(J))GO TO 262
      IRANGE(I)=J
      GO TO 263
  262 CONTINUE
  263 IALF(I)=1
      IF(LALF(K,1).EQ.MALF(2))IALF(I)=2
      L=IALF(I)
      J=IRANGE(I)
      IF(LALF(K,1).EQ.IBLANK.AND.TOW(J,I,L).GT.1.
     +.AND.OPWGT(K,1).LT.1.)LALF(K,1)=MALF(I)
      IF(TOW(J,I,L).LT.1..AND.OPWGT(K,1).LT.1.)OPWGT(K,1)=AIRC(I,1)
      IF(OPWGT(K,1).LT.1.)OPWGT(K,1)=TOW(J,I,L)
      IF(OPWGT(K,2).LT.1.)OPWGT(K,2)=(AIRC(I,2)-AIRC(I,3))
     +*(OPWGT(K,1)-AIRC(I,3))/(AIRC(I,1)-AIRC(I,3))+AIRC(I,3)
      IF(OPWGT(K,3).LT.1.)OPWGT(K,3)=1.5*OPWGT(K,2)
  270 CONTINUE
```

```
      1317 ELAY=EVAL(KM,IHSA)
           EBOT=EVAL(KM,NL)
      1318 CONSTA=VALC(KB,2)*SQRT(ELAY)*VALC(KB,3)*(1.-VALC(KB,4))
           DO 1330 IA=1,NOPWGT
           I=IAIRC(IA)
           IF(I.LE.0)GO TO 1330
           DO 1320 J=1,3
           ANS(I,J)=-(ABS(STRFD(KAA))-ABS(STRFAM(I,J)))/CONSTA
      1320 CONTINUE
      1330 CONTINUE
           ANS(20,1)=0.
           DO 1350 IA=1,NOPWGT
           I=IAIRC(IA)
           IF(I.LE.0)GO TO 1350
           DO 1340 J=1,3
           FACTOR(I,J)=WZFAM(I,J)/WZW(I,J)
           PRESS=AIRC(I,6)*FACTOR(I,J)
           WO=2.*PRESS*RADIUS(I,J)*VALC(KB,10)/EBOT
           D4=1./VALC(KB,8)
           DODEF=WO**(1.-D4)*WZFAM(I,J)**D4*VALC(KB,7)**(-D4)
           AND(I,J)=DODEF
      1340 CONTINUE
      1350 CONTINUE
           FACTOR(20,1)=WZFD(KAA)/WZWFD(KAA)
           PRESS=AIRC(ID,6)*FACTOR(20,1)
           WO=2.*PRESS*RADIUS(20,1)*VALC(KB,10)/EBOT
           AND(20,1)=WO**(1.-D4)*WZFD(KAA)**D4*VALC(KB,7)**(-D4)
           DO 1376 I=1,NPAVHD
           IF(IPAVL(I).EQ.ICL)GO TO 1374
           IF(IPAVL(I).GT.ICL)GO TO 1372
           REWIND 9
           ICL=0
      1372 ICL=ICL+1
           IF(IFAMDS(ICL,1).LE.0)GO TO 1372
           READ(9)((ANS(IA,J),AND(IA,J),FACTOR(IA,J),IA=1,20),J=1,3)
           IF(IPAVL(I).NE.ICL)GO TO 1372
      1374 WRITE(12)((ANS(IA,J),AND(IA,J),FACTOR(IA,J),IA=1,20),J=1,3)
      1376 CONTINUE
           ENDFILE 12
           REWIND 12
           REWIND 9
           REWIND L18
           NSLP=FINA(6)
           ASCM=(FINA(4)+FINA(3)-FINA(2))-FINA(2)*(FINA(3)+FINA(4))
           PCVAMC=FLOAT(NSLP-1)*(1.+FLOAT(NSLP-2)*ASCM/2.*
          +(1.+FLOAT(NSLP-3)*ASCM/3.))
           AIRBV=1.-1./(1.+FINA(1))
           PCVICC=1.-(FINA(5)-2.)*(FINA(2)-AIRBV)/2.*
          +(1.-(FINA(5)-3.)*FINA(2)/3.)
```

A2.09 Subroutine FAM

```
      DO 419 J=1,3
      ANSA(I,J)=10.**(ANS(I,J)/(6./PKSF/(1.+DI(LOC,ITYP))))
  419 CONTINUE
      DO 420 J=1,3
C     CONST=2.28
C     C1=.01
C     DD=SQRT(D1(LOC,ITYP)/(1.+DI(LOC,ITYP)))
C     VV=DD*VEL(LOC,ITYP)+60.*(1.-DD)
C     XX=8.6*FACTOR(I,J)+XNZ(I)/RADIUS(I,J)
C     AK=CONST/VV*DI(LOC,ITYP)/SQRT(AIRC(I,7))
C     AAK=10.**(VALC(KP,5)*ALOG10(AK/VALC(KP,6)))
C     DN=12.*AAK*SQRT(XX*RADIUS(I,J)/12.)
C     ANDB(I,J)=(DN-C1)/AND(I,J)
      ANDA(I,J)=10.**((AND(I,J)-AND(20,1))/AND(I,J))
  420 CONTINUE
C     IF(KPAV(KP).LE.1)WRITE(6,40)DI(LOC,ITYP),VEL(LOC,ITYP),
C    +(FACTOR(I,J),J=1,3),XNZ(I),(RADIUS(I,J),J=1,3),AIRC(I,7),
C    +VALC(KP,5),VALC(KP,6)
C  40 FORMAT(1X,12F11.6)
  425 CONTINUE
C     XX=8.6*FACTOR(20,1)+XNZ(ID)/RADIUS(20,1)
C     AK=CONST/VV*DI(LOC,ITYP)/SQRT(AIRC(ID,7))
C     AAK=10.**(VALC(KP,5)*ALOG10(AK/VALC(KP,6)))
C     DN=12.*AAK*SQRT(XX*RADIUS(20,1)/12.)
C     ANDB(20,1)=(DN-C1)/AND(20,1)
      ANDA(20,1)=1.
C     IF(KPAV(KP).LE.1)
C    +WRITE(6,30)((AND(I,J),J=1,3),I=1,12)
C     IF(KPAV(KP).LE.1)
C    +WRITE(6,30)AND(20,1)
C  30 FORMAT(1X,1P6E13.5)
      DO 600 K=1,NST1
C     DO 440 IA=1,NOPWGT
C     I=IAIRC(IA)
C     IF(I.LE.0)GO TO 440
C     DO 430 J=1,3
C     ANDA(I,J)=0.
C     IF(ATM(K,IA,J).LE.0.0001)GO TO 430
C     ANDA(I,J)=10.**((ANDB(20,1)-ANDB(I,J))
C    +)
C    +*ALOG10(ATM(K,IA,J)*APX(I,J,IAPX))/ANDB(20,1))
C 430 CONTINUE
C 440 CONTINUE
C *** ADDED
      DO 450 J=1,3
  450 SEQMOV(J)=0.
      DO 470 IA=1,NOPWGT
      I=IAIRC(IA)
      IF(I.LE.0)GO TO 470
      DO 460 J=1,2
      SEQS(I,J)=ATM(K,IA,J)*ANSA(I,J)*APX(I,J,IAPX)
```

```
141           SEQMOV(J)=SEQMOV(J)+ATM(K,IA,J)*ANSA(I,J)*APX(I,J,IAPX)
142        480 CONTINUE
143           J=3
144           EQS(I,J)=0.
145           IF(NW.GT.2)EQS(I,J)=ATM(K,IA,J)*ANSA(I,J)*APX(I,J,IAPX)
146          +*APY(I)
147           IF(NW.GT.2)SEQMOV(J)=SEQMOV(J)+ATM(K,IA,J)*ANSA(I,J)*
148          +APX(I,J,IAPX)*APY(I)
149        470 CONTINUE
150           AANS(K,LOC)=0.
151           DO 480 J=1,NW
152           AANS(K,LOC)=AANS(K,LOC)+SEQMOV(J)
153        480 CONTINUE
154           AANS(K,LOC)=AANS(K,LOC)*SPERC(LOC)
155     C *** AAND
156           DO 490 J=1,3
157        490 DEQMOV(J)=0.
158           DO 510 IA=1,NUPWGT
159           I=IAIRC(IA)
160           IF(I.LE.0)GO TO 510
161           DO 500 J=1,2
162           EQD(I,J)=0.
163           ALND=0.
164           IF(ATM(K,IA,J).GT.0.1)
165          +ALND=ALOG10(ATM(K,IA,J)*APX(I,J,IAPX))
166           IF(ALND.GT.3.)ALND=3.
167           IF(ATM(K,IA,J).GT.0.1)
168          +EQD(I,J)=(ANDA(I,J)**ALND)
169          +*ATM(K,IA,J)*APX(I,J,IAPX)
170           DEQMOV(J)=DEQMOV(J)+EQD(I,J)
171        500 CONTINUE
172           J=3
173           EQD(I,J)=0.
174           ALND=0.
175           IF(NW.GT.2.AND.ATM(K,IA,J).GT.0.1)
176          +ALND=ALOG10(ATM(K,IA,J)*APX(I,J,IAPX)*APY(I))
177           IF(ALND.GT.3.)ALND=3.
178           IF(NW.GT.2.AND.ATM(K,IA,J).GT.0.1)
179          +EQD(I,J)=(ANDA(I,J)**ALND)
180          +*ATM(K,IA,J)*APX(I,J,IAPX)*APY(I)
181           IF(NW.GT.2)DEQMOV(J)=DEQMOV(J)+EQD(I,J)
182        510 CONTINUE
183           AAND(K,LOC)=0.
184           DO 520 J=1,NW
185           AAND(K,LOC)=AAND(K,LOC)+DEQMOV(J)
186        520 CONTINUE
187           AAND(K,LOC)=AAND(K,LOC)*SPERC(LOC)
```

A2.10 Subroutine HDES

```
      C *** STRESS LIMIT
            NL=NLAYER(KM)
            NL1=NL-1
            DO 190 J=1,NL1
            STRL(K,LOC,J)=SQRT(EVAL(KM,J))*(1.-VALC(KP,3)*
           +ALOG10(AANS(K,LOC)))/(1.+DI(LOC,ITYP))
            STRL(K,LOC,J)=STRL(K,LOC,J)*VALC(KP,2)
            OVERSF=VALC(KP,1)
            IF(LOC.GT.1)OVERSF=VALC(KP,9)
            STRL(K,LOC,J)=STRL(K,LOC,J)*OVERSF*(1.-VALC(KP,4))
        190 CONTINUE
            IF(KN.LE.0)GO TO 197
            NLA=NPSLAY(KN)
            NLA1=NLA-1
            DO 195 J1=1,NLA1
            J=J1+NL1
            STRL(K,LOC,J)=SQRT(PSLE(KN,J1))*(1.-VALC(KP,3)*
           +ALOG10(AANS(K,LOC)))/(1.+DI(LOC,ITYP))
            STRL(K,LOC,J)=STRL(K,LOC,J)*VALC(KP,2)
            OVERSF=VALC(KP,1)
            IF(LOC.GT.1)OVERSF=VALC(KP,9)
            STRL(K,LOC,J)=STRL(K,LOC,J)*OVERSF*(1.-VALC(KP,4))
        195 CONTINUE
      C *** WZL
        197 CONST=2.28
            C1=.01
            XX=8.6*FACTOR(20,1)+XNZ(ID)/RADIUS(20,1)
            PRESS=AIRC(ID,6)*FACTOR(20,1)
            DD=SQRT(DI(LOC,ITYP)/(1.+DI(LOC,ITYP)))
            VV=DD*VEL(LOC,ITYP)+60.*(1.-DD)
            AK=CONST/VV*DI(LOC,ITYP)/SQRT(AIRC(ID,7))
      C     WRITE(6,20)KP,AK,VALC(KP,6)
      C  20 FORMAT(1X,I5,2F10.4)
            AAK=10.**(VALC(KP,5)*ALOG10(AK/VALC(KP,6)))
            DN=12.*AAK*SQRT(XX*RADIUS(20,1)/12.)
            EBOT=EVAL(KM,NL)
            IF(KN.GT.0)EBOT=PSLE(KN,NLA)
            WO=2.*PRESS*RADIUS(20,1)*VALC(KP,10)/EBOT
            D3=VALC(KP,7)*WO**(1.-VALC(KP,8))
            IF(AAND(K,LOC).LE.10.)WZL(K,LOC)=(DN-C1)**VALC(KP,8)
            IF(AAND(K,LOC).GT.10.)
           +WZL(K,LOC)=((DN-C1)/ALOG10(AAND(K,LOC)))**VALC(KP,8)
            D4=1./VALC(KP,8)
            DODEF=VALC(KP,7)**(-D4)
            IF(NXSL.LE.1)WZL(K,LOC)=(DN-C1)
      C *** WO AND D3 TO BE CALCULATED LATER
      C *** SHOULD USE ESUP
```

```
      360 IST=IST-1
      370 I1=IEST+IES
          ESUP(K)=ESUB(I1)
          NL=NLAYER(KM)
          NL1=NL-1
          PRESS=AIRC(ID,6)*FACTOR(20,1)
          WO=2.*PRESS*RADIUS(20,1)*VALC(KP,10)/ESUP(K)
          D3=VALC(KP,7)*WO**(1.-VALC(KP,8))
          D4=1./VALC(KP,8)
          LOC2=2
          IF(NXSL.LE.1)GO TO 501
          DO 373 LOC=1,LOC2
          WZLIM(K,LOC)=D3*WZL(IST,LOC)
          TAND(K,LOC)=AAND(IST,LOC)
          TANS(K,LOC)=AANS(IST,LOC)
          DO 371 J=1,NL1
          STRLIM(K,LOC,J)=STRL(IST,LOC,J)
      371 CONTINUE
          IF(KN.LE.0)GO TO 373
          DO 372 J1=1,NLA1
          J=J1+NL1
          STRLIM(K,LOC,J)=STRL(IST,LOC,J)
      372 CONTINUE
      373 CONTINUE
C     *** INTERPOLATE EVALUE
          IF(ESUB(I1).GT.ESUBG(1))GO TO 375
C     *** ERROR
      375 DO 380 I=2,NE
          IF(ESUB(I1).EQ.ESUBG(I))GO TO 390
          IF(ESUB(I1).LT.ESUBG(I))GO TO 410
      380 CONTINUE
C     *** ERROR
          I=NE
          GO TO 410
      390 DO 400 N=1,NHG
          WZ(N)=WZH(N,I)
          STR(N)=STRH(N,I)
      400 CONTINUE
          GO TO 422
      410 DO 420 N=1,NHG
          WZ(N)=(WZH(N,I)-WZH(N,I-1))*(ESUB(I1)-ESUBG(I-1))
         +/(ESUBG(I)-ESUBG(I-1))+WZH(N,I-1)
          STR(N)=(STRH(N,I)-STRH(N,I-1))*(ESUB(I1)-ESUBG(I-1))
         +/(ESUBG(I)-ESUBG(I-1))+STRH(N,I-1)
      420 CONTINUE
      422 DO 500 J=1,2
          IF(WZLIM(K,J).LT.WZ(1))GO TO 425
          HDES(K,J)=HVAL(KM,1)
          GO TO 460

      425 DO 430 N=2,NHG
          IF(WZLIM(K,J).GE.WZ(N))GO TO 450
      430 CONTINUE
```

```
221           HDES(K,J)=HVAL(KM,2)+HVAL(KM,3)/2.
222           ICRIT(K,J)=-1
223           GO TO 500
224        450 HDES(K,J)=(HGRID(KM,N)-HGRID(KM,N-1))*(WZLIM(K,J)-WZ(N-1))
225           +/(WZ(N)-WZ(N-1))+HGRID(KM,N-1)
226        460 IH=IPAVHS(KI)
227           IF(KN.GT.0)IH=IH+NL1
228           IF(STRLIM(K,J,IH).LT.STR(1))GO TO 465
229           H=HVAL(KM,1)
230           GO TO 480
231        465 DO 470 N=2,NHG
232           IF(STRLIM(K,J,IH).GE.STR(N))GO TO 475
233        470 CONTINUE
234           HDES(K,J)=HVAL(KM,2)+HVAL(KM,3)/2.
235           ICRIT(K,J)=1
236           GO TO 500
237        475 H=(HGRID(KM,N)-HGRID(KM,N-1))*(STRLIM(K,J,IH)-STR(N-1))
238           +/(STR(N)-STR(N-1))+HGRID(KM,N-1)
239        480 ICRIT(K,J)=-1
240           IF(HDES(K,J).GT.H)GO TO 500
241           HDES(K,J)=H
242           ICRIT(K,J)=1
243        500 CONTINUE
244           GO TO 510
245        501 IP=IPFL(I1)
246           IF(ESUP(K).GT.PFLESG(1))GO TO 502
247           WZ(IP)=WZH(IP,1)+.25*(WZH(IP,1)-WZH(IP,2))
248           STR(IP)=STRH(IP,1)+.25*(STRH(IP,1)-STRH(IP,2))
249           GO TO 504
250        502 DO 503 I=2,NFLESG
251           IF(ESUP(K).GT.PFLESG(I))GO TO 503
252           WZ(IP)=(WZH(IP,I)-WZH(IP,I-1))*(ESUP(K)-PFLESG(I-1))
253           +/(PFLESG(I)-PFLESG(I-1))+WZH(IP,I-1)
254           STR(IP)=(STRH(IP,I)-STRH(IP,I-1))*(ESUP(K)-PFLESG(I-1))
255           +/(PFLESG(I)-PFLESG(I-1))+STRH(IP,I-1)
256           GO TO 504
257        503 CONTINUE
258           WZ(IP)=WZH(IP,NFLESG)-.25*(WZH(IP,NFLESG-1)-WZH(IP,NFLESG))
259           STR(IP)=STRH(IP,NFLESG)-.25*(STRH(IP,NFLESG-1)-STRH(IP,NFLESG))
260        C 504 DODEF=WO**(1.-D4)*WZ(IP)**D4*VALC(KP,7)**(-D4)
261        504 DODEF=ESUB(I1)/(VALC(KP,7)*EPAV(I1))
262           DODEF=WO*10.**(D4*ALOG10(DODEF))
263           TAND(K,1)=AAND(IST,1)
264        C  TAND(K,2)=10.**(WZL(IST,1)/DODEF)
265           TAND(K,2)=(WZL(IST,1)/DODEF)
266           IF(TAND(K,2).GT.30.)TAND(K,2)=30.
267           TAND(K,2)=10.**TAND(K,2)
268           TANS(K,1)=AANS(IST,1)
269           IH=IHS(IP)
270           SIGY=VALC(KP,1)*(1.-VALC(KP,4))*VALC(KP,2)*SQRT(EVAL(IP,IH))
271           SIGY=SIGY/(1.+DI(1,ITYP))
272        C  TANS(K,2)=10.**((SIGY-STR(IP))/(VALC(KP,3)*SIGY))
273           TANS(K,2)=((SIGY-STR(IP))/(VALC(KP,3)*SIGY))
274           TANS(K,2)=10.**TANS(K,2)
275        510 CONTINUE
```

A2.11 Subroutine PCVCAL

```
      DO 300 LOC=1,2
      DO 200 K=1,NAST1
      IHSA=IHAVHS(K1)
      IF(KM.LE.6)ILAY=LVAL(KP,IHSA)
      IF(KM.GT.6)ILAY=PBLE(KM,IHSA)
      IF(KM.GT.1)IHSA=IHSA+NLAYBP(KM)-1
      KP=IHS(K1)
      IL=ILAYBK(KM,IA)
      AIGG(K,LOC)=GGS1(KM)+HDES(K,LOC)*UL(IL)
      USTR=VALC(KP,2)*SQRT(FLAY)*(1.-VALC(KP,4))
      ULSTR=ULSTR*(1.-VALC(KP,3)*ALOG10(TAVG(K,LOC)))
      OVERSF=VALC(KP,1)
      IF(LOC.GT.1)OVERSF=VALC(KP,9)
      ZAC=VALC(KP,4)*OVERSF*(ULSTR-ASTR)/(ULSTR-STRLIM(K,LOC,IHSA)
     +/OVERSF)
      AAC(K,LOC)=ZAC*UL(IL)
      PCV(K,LOC)=AAC(K,LOC)*P(VAAC+AIGG(K,LOC)*PCVICG
  200 CONTINUE
  300 CONTINUE
      IF(FSTA(IXFAC,2).GT.0.0)GO TO 320
      APCV(1)=PCV(1,1)
      APCV(2)=PCV(1,2)
      GO TO 900
  320 DO 400 LOC=1,2
      APCV(LOC)=0.
      DO 350 K=1,NAST1
      APCV(LOC)=APCV(LOC)+PCV(K,LOC)*(ASTA(K+1)-ASTA(K))
  350 CONTINUE
      APCV(LOC)=APCV(LOC)/(ASTA(NAST)-ASTA(1))
  400 CONTINUE
```

A2.12 Subroutine COBEL

```
      SUBROUTINE COBEL
      DO 245 K=1,NAST1
      WBELLY(K,IK)=PCV(K,1)
  245 CONTINUE
      IF(LA.NE.LZ)GO TO 270
      IBAR1=IBAR+1
      IF(IBAR.LT.1)GO TO 270
      IBAR=0
      ITYP=ITYPE(IXFAC)
      XK=XL=BANL(IXBA,J,ITYP)+XMAX/12.
      XK=XK/WIDTH(ITYP)
      NPAVK=NPAVK+1
      IF(IPAVAS(IXFAC).GT.0)GO TO 2452
      DO 2450 I=1,NPAVK
      IK=IPAVK(I,1)
      IS=IPAVK(I,2)
      IF(IETYPE(IK).NE.ISUB)GO TO 2452
      IF(IS.LE.0)GO TO 2452
      IF(IETYPE(IS).NE.ISUB)GO TO 2452
 2450 CONTINUE
      I=NPAVK+1
 2452 NPAVK=I-1
      DO 266 I=1,NPAVK
      IK=IPAVK(I,1)
      IS=IPAVK(I,2)
      APCV(I)=0.
      IF(APCVA(IK,1).LE.0.0)GO TO 260
      IF(FSTA(IXFAC,2).GT.0.00)GO TO 246
      APCV(I)=APCVA(IK,1)
      GO TO 260
  246 APCVT=APCVA(IK,1)
      IF(IS.LE.0)GO TO 2460
      IF(IETYPE(IK).NE.ISUB.OR.IETYPE(IS).EQ.ISUB)GO TO 249
 2460 APCVT=0.
      DO 2462 J=1,NAST1
      KC=IPAD(J)
      KN=IPAVHD(KC,2)
      APCVT=APCVT+(WBELLY(J,IK)+CONSTP(KN)*PCVICC)*(ASTA(J+1)-ASTA(J))
 2462 CONTINUE
      APCVT=APCVT/(ASTA(NAST)-ASTA(1))
      IF(IS.GT.0)GO TO 249
      DO 247 J=1,NLAY
      IF(MLAY(J,1).EQ.IPAV)GO TO 248
  247 CONTINUE
      GO TO 260
  248 APCV(I)=APCVA(IK,1)*50./WIDTH(ITYP)+PCVICC*UL(J)
      APCV(I)=APCVT*WK+PCVICC*UL(J)
      GO TO 260
  249 IF(APCVA(IS,2).LE.0.0)GO TO 260
  250 APCV(I)=(SDEC(I)+(1.-SDEC(I))*WK)*APCVT
      WAPCV(I)=WAPCV(I)+(1.-SDEC(I))*(1.-WK)*APCVA(IS,2)
```